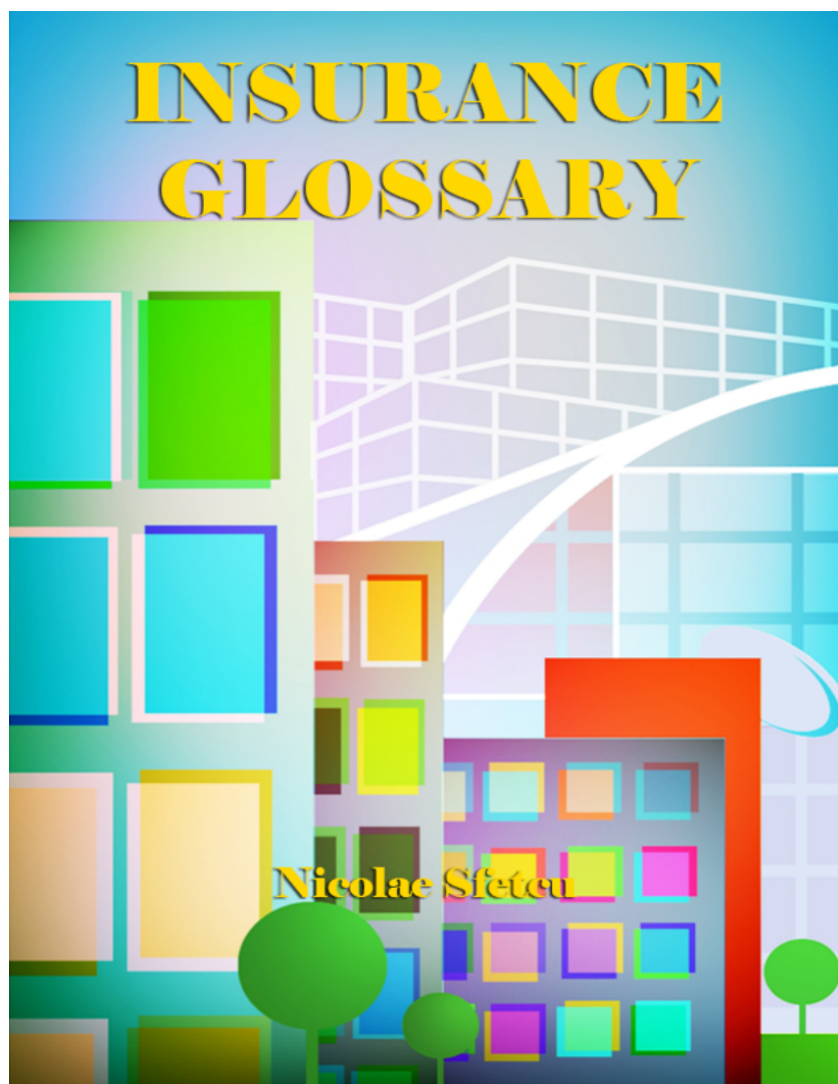


INSURANCE GLOSSARY

Nicolae Sfetcu



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Insurance, in law and economics, is a form of risk management primarily used to hedge against the risk of potential financial loss. Insurance is defined as the equitable transfer of the risk of a potential loss, from one entity to another, in exchange for a premium and duty of care.

Insurance

Principles of insurance

Losses must be uncertain.

The rate of losses must be relatively predictable: In order to set premiums (prices) insurers must be able to estimate them accurately. This is done using the Law of Large Numbers which states that: The larger the number of **homogenous** exposures considered, the more closely the losses reported will equal the underlying probability of loss. If the coverage is unique, the insured will pay a correspondingly higher premium. [Lloyd's of London](#) often accepts unique coverages. (e.g., the insuring of Tina Turner's legs and Jennifer Lopez's buttocks)

The loss must be significant: The legal principle of *De minimis* dictates that trivial matters are not covered. Furthermore, rational insurance uses existing insurance when the transaction costs dictate that filing a claim is not rational.

The loss must not be catastrophic: If the insurer is insolvent, it will be unable to pay the insured. In the United States, there is a system of Guaranty Funds run at the state level to reimburse insured people whose insurance companies have become insolvent. [1] This program is run by the National Association of Insurance Commissioners (NAIC). [2] To avoid catastrophic depletion of their own capital, insurers almost universally purchase [reinsurance](#) to protect them against excessively large accumulations of risk in a single area, and to protect them against large-scale catastrophes.

Additionally, “speculative risks” like those incurred through gambling or through the purchase of company stocks are uninsurable.

Insurance Contract Principles

A property or liability insurance policy is a "personal contract," a "conditional contract," a "unilateral contract," a "contract of adhesion," a "contract of indemnity," and a contract which requires that the person insured have an insurable interest at the time of the insured-against contingency.

Further: An Insurance Contract is one of *Uberrima fides*. This is a Latin phrase meaning "utmost good faith" (or translated literally, "most abundant faith"). It is name of a legal doctrine which governs insurance contracts. This means that all parties to an insurance contract must deal in good faith, making a full declaration of all material facts in the insurance proposal. This contrasts with the legal doctrine of *caveat emptor* (let the buyer beware).

Personal Contract

Property and liability insurance policies cover persons and not property or operations. Although the terms "insured my house" or "insured my motorcycle" are used commonly, they are not technically correct. The contract between the insurer and the insured is a personal contract between an insuring entity and a person(s) based upon their financial, "insurable interest", in the object or liability being insured. In other words, the question of whether payment is due upon the occurrence of a contingency, and how such payment will be measured, depends upon economic loss suffered by the person(s).

Conditional Contract

Property and liability insurance policies are said to be "conditional contracts" because the obligation of the insurer to perform may be conditioned upon the insured satisfying certain conditions.

Unilateral Contract

Only one party is legally bound to contractual obligations after the premium is paid to the insurer. Only the insurer has made a promise of future performance, and only the insurer can be charged with breach of contract.

Contract of Adhesion

Property and liability insurance policies are said to be "contracts of adhesion" because the insurer and insured parties are of unequal bargaining power where the insured party cannot negotiate the terms of the contract and must take the offer of the insurer as made. Importantly, the rule of law regarding "contracts of adhesion" is that any ambiguities resolve in favor of the insured.

Contract of Indemnity

Property and liability insurance policies are said to be "contracts of indemnity" because the purpose of insurance is to indemnify the insured—that is, to make good a loss that the insured has suffered. The principle of indemnification is that the insured should not profit from the policy. This does not preclude that the insured will suffer some loss. In fact, many policies include a deductible which guarantees that the insured will pay part of each loss himself.

Insurable Interest

Insurable interest is one wherein economic loss would be suffered from an adverse occurrence to the person(s) insured.

A contract of insurance is valid in law only if the insured has an insurable interest—that is, if he has a legally recognized financial relationship with the subject matter of the insurance and stands to lose out if that subject is damaged.

Indemnification

An entity seeking to transfer risk (an individual, corporation, or association of any type) becomes the 'insured' party once risk is assumed by an 'insurer', the insuring party, by means of a contract, defined as an insurance 'policy'. This legal contract sets out terms and conditions specifying the amount of coverage (compensation) to be rendered to the insured, by the insurer upon assumption of risk, in the event of a loss, and all the specific perils covered against ([indemnified](#)), for the term of the contract.

When insured parties experience a loss for a specified peril, the coverage entitles the policyholder to make a 'claim' against the insurer for the amount of loss as specified by the policy contract. The fee paid by the insured to the insurer for assuming the risk is called the 'premium'. Insurance premiums from many clients are used to fund accounts set aside for later payment of claims—in theory for a relatively few claimants—and for overhead costs. So long as an insurer maintains adequate funds set aside for anticipated losses, the remaining margin becomes their profit.

How an insurance company makes money

$$\text{Profit} = \text{Earned Premium} + \text{Investment Income} - \text{Incurred Loss} - \text{Underwriting Expenses}.$$

Insurers make money in two ways. Through underwriting, the process through which insurers select what risks to insure and decide how much premium to charge for accepting those risks and by investing the premiums they have collected from insureds.

The most difficult aspect of the insurance business is the underwriting of policies. Based on a wide assortment of data, insurers predict the likelihood that a claim will be made against their policies and price products accordingly. At the end of the policy term, the amount of premium collected minus the amount paid out in claims is the insurer's underwriting profit.

An insurer's underwriting performance is measured in their combined ratio. The loss ratio (incurred losses and loss-adjustment expenses divided by net earned premium) is added to the expense ratio (underwriting expenses divided by net premium written) to determine the company's combined ratio. The combined ratio is a reflection of the company's overall underwriting profitability. A combined ratio of less than 100 percent indicates profitability, while anything over 100 indicates a loss.

One company that is famous for achieving underwriting profit is American International Group.

Berkshire Hathaway, by contrast, is famous for making its money on "float" rather than underwriting profit. "Float" describes a process by which insurers invest insurance premiums as soon as they are collected and make interest on these monies before claims must be paid out.

Naturally, the "float" method is difficult to carry out in an economically depressed period. Bear markets do cause insurers to shift away from investments and to toughen up their underwriting standards. So a poor economy generally means high insurance premiums.

Insurers currently make the most money from their auto insurance line of business. Generally better statistics are available on auto losses and underwriting on this line of business has benefited greatly from advances in computing. Additionally, property losses in the US, due to natural catastrophes, have perpetuated this trend.

Determination of rate structures

The insurer uses [actuarial science](#) to quantify the risk they are willing to assume. Data is generated to approximate future claims, ordinarily with reasonable accuracy. Actuarial science uses statistics and probability to analyze the risks associated with the range of perils covered, and these scientific principles are used by insurers, in conjunction with additional factors, to determine rate structures.

For example, many individuals purchase homeowner's insurance policies by signing a contract paying a premium to an insurance company. If a covered loss occurs, the insurer is obliged by the terms of the contract to honor the insured's claim. For some policyholders, the amount of insurance benefits received from their insurer will greatly exceed the expense of premiums paid. Others may never make a claim or receive any benefit other than the peace of mind rendered by the security of an insurance policy. When averaged, the total claims expense paid by an insurer should be less than the total premiums paid by their policyholders, with the difference allocated to overhead and profit.

Insurance companies also earn investment profits. These are generated by investing premiums received until they are needed to pay claims. This money is called the 'float'. The insurer may make profits or losses from the value change in the float as well as interest or dividends on the float. In the United States, the underwriting loss of property and casualty insurance companies was \$142.3 billion in the five years ending 2003. But overall profit for the same period was \$68.4 billion, at the result of float. Some insurance industry insiders, most notably Hank Greenberg, do not believe that it is forever possible to sustain a profit from float without an underwriting profit as well, but this opinion is not universally held.

Gambling analogy

Some people consider insurance a type of wager (particularly as associated with moral hazard) that executes over the policy period. The insurance company bets that you or your property will not suffer a loss while you put money on the opposite outcome. The difference in the fees paid to the insurance company versus the amount for which they can be held liable if an accident happens is roughly analogous to the odds one might expect when betting on a racehorse (for example, 10 to 1). For this reason, a number of religious groups, including the Amish and some Muslim groups, avoid insurance and instead depend on support provided by their communities when disasters strike. This can be thought of as "social insurance," as the risk of any given person is assumed collectively by the community who will all bear the cost of rebuilding. In closed, supportive communities where others can be trusted to step in to rebuild lost property, this arrangement can work.

However, most societies could not effectively support this type of system, and the system will not work for large risks. For very large risks, Western insurance can also run into difficulties. This is the reason why most U.S. homeowner's insurance does not cover floods. A company that sells homeowner's insurance in a given city can accurately estimate the number of claims it would have to pay due to fires, tornadoes, and other smaller-scale disasters. However, a flood may impact a large percentage of the city and the company might be unable to deal with this. A prime example of this is the flooding in New Orleans as a result of Hurricane Katrina. For the same reason, losses due to war and earthquakes are generally excluded. In the case of floods and earthquakes (which are smaller-scale than war) homeowners can purchase separate insurance from national companies with larger resources, which are able to distribute the risk across regions rather than individual buildings.

In gaming or gambling, the game is fixed at the start so that the odds are not affected by the players. However, to obtain certain types of insurance, such as fire insurance, policyholders are often required to conduct risk mitigation practices, such as installing sprinklers and using fireproof building materials to reduce the odds of loss to fire. In addition, after a proven loss, insurers specialize in providing rehabilitation to minimize the total loss.

While insurance is analogous to gambling in terms of risk and reward, the main difference is in the motivation behind the process (risk seeking vs. risk avoidance). When gambling, you are assuming

risk that you would not otherwise be exposed to that has the possibility of either a loss or a gain (speculative risk). (Perhaps put differently, in a gambling transaction the relationship between the bettor and the subject is created through the bet itself; for an insurance transaction, there is an exogenous relationship, usual economic or familial, that is connected to the insurance—which is a way of restating the insurance interest requirement.) With insurance, you are managing risk that you could not otherwise avoid, and which does not present the possibility of gain (pure risk). Risk management, the practice of appraising and controlling risk, has evolved as a discrete field of study and practice. Avoiding, mitigating and transferring certain risk creates greater predictability for consumers and business, and allows people and organizations to use risk intelligently to maximize their opportunities.

Historically, gambling has been considered an uninsurable risk. Recent developments, however, have led to the invention and patenting of new types of insurance to protect against gambling losses. An example is United States Patent 6,869,362, "[Method and apparatus for providing insurance policies for gambling losses](#)"

History of insurance

Early methods of transferring or distributing risk were practiced by Chinese and Babylonian traders as long ago as the 3rd and 2nd millennia BCE respectively. Chinese merchants traveling treacherous river rapids would redistribute their wares across many vessels to limit the loss due to any single capsizing. The Babylonians developed a system which was recorded in the famous Code of Hammurabi, c. 1750 BC, and practiced by early Mediterranean sailing merchants. If a merchant received a loan to fund his shipment, he would pay the lender an additional sum in exchange for the lender's guarantee to cancel the loan should the shipment be stolen.

Achaemenian monarchs were the first to insure their people and made it official by registering the insuring process in governmental notary offices. The insurance tradition was performed each year in Norouz (beginning of the Iranian New Year); the heads of different ethnic groups as well as others willing to take part, presented gifts to the monarch. The most important gift was presented during a special ceremony and when a gift was worth more than 10,000 Derrik (Achaemenian gold coin weighing 8.35-8.42) the issue was registered in a special office. This was advantageous to those presented such special gifts. For others, the presents were fairly assessed by the confidants of the court. Then the assessment was registered in special offices.

The aim of registering was that whenever the one who presented the gift registered by the court was in trouble, the monarch and the court would help him or her. Jahez, a historian and writer, writes in one of his books on ancient Iran: "... and whenever the owner of the present is in trouble or wants to construct a building, set up a feast, have his children married, etc. the one in charge of this in the court would check the registration. If the registered amount exceeded 10,000 Derrik, he or she would receive an amount of twice as much."

A thousand years later, the inhabitants of Rhodes invented the concept of the 'general average'. Merchants whose goods were being shipped together would pay a proportionally divided premium which would be used to reimburse any merchant whose goods were jettisoned during storm or sinkage.

The Greeks and Romans introduced the origins of health and life insurance c. 600 AD when they organized guilds called "benevolent societies" which acted to care for the families and funeral expenses of members upon death. Guilds in the Middle Ages served a similar purpose. The Talmud deals with several aspects of insuring goods.

Before insurance was established in the late 17th century, "friendly societies" existed in England, in which people donated amounts of money to a general sum that could be used in case of emergency.

Separate insurance contracts (i.e. insurance policies not bundled with loans or other kinds of contracts) were invented in Genoa in the 14th century, as were insurance pools backed by pledges of landed estates. These new insurance contracts allowed insurance to be separated from investment, a separation of roles that first proved useful in marine insurance. Insurance became far more sophisticated in post-Renaissance Europe, and specialized varieties developed.

Toward the end of the seventeenth century, the growing importance of London as a center for trade led to rising demand for marine insurance. In the late 1680s, Mr. Edward Lloyd opened a coffee house which became a popular haunt of ship owners, merchants, and ships' captains, and thereby a reliable source of the latest shipping news. It became the meeting place for parties wishing to insure cargoes and ships, and those willing to underwrite such ventures. Today, [Lloyd's of London](#) remains the leading market for marine and other specialist types of insurance, but it works rather differently than the more familiar kinds of insurance.

Insurance as we know it today can be traced to the Great Fire of London, which in 1666 devoured 13,200 houses. In the aftermath of this disaster Nicholas Barbon opened an office to insure buildings. In 1680 he established England's first fire insurance company, "The Fire Office," to insure brick and frame homes.

The first insurance company in the United States provided fire insurance and was formed in Charles Town (modern-day Charleston), South Carolina, in 1732.

Benjamin Franklin helped to popularize and make standard the practice of insurance, particularly against fire in the form of [perpetual insurance](#). In 1752, he founded the [Philadelphia Contributionship for the Insurance of Houses from Loss by Fire](#). Franklin's company was the first to make contributions toward fire prevention. Not only did his company warn against certain fire hazards, it refused to insure certain buildings where the risk of fire was too great, such as all wooden houses.

In the United States, regulation of the insurance industry is highly Balkanized, with primary responsibility assumed by individual State insurance departments. Whereas insurance markets have become centralized nationally and internationally, state insurance commissioners operate individually, though at times in concert through a national insurance commissioner's organization. In recent years, some have called for a federal regulatory system for insurance similar to that of the banking industry.

In the State of New York, which has unique laws in keeping with its stature as a global business center, Attorney General Eliot Spitzer has been in a unique position to grapple with major national insurance brokerages. Spitzer alleged that Marsh & McLennan steered business to insurance carriers based on the amount of contingent commissions that could be extracted from carriers, rather than basing decisions on whether carriers had the best deals for clients. Several of the largest commercial insurance brokerages have since stopped accepting contingent commissions and have adopted new business models.

Types of insurance

Any risk that can be quantified probably has a type of insurance to protect it. Among the different types of insurance are:

- **Automobile insurance**, also known as *auto insurance*, *car insurance* and in the UK as *motor insurance*, is probably the most common form of insurance and may cover both legal liability claims against the driver and loss of or damage to the vehicle itself. Over most of the United States purchasing an auto insurance policy is required to legally operate a motor vehicle on public roads. Recommendations for which policy limits should be used are specified in a number of books. In some jurisdictions, bodily injury compensation for automobile accident victims has been changed to **No Fault** systems, which reduce or eliminate the ability to sue for compensation but provide automatic eligibility for benefits.
- **Boiler insurance** (also known as Boiler and Machinery insurance or Equipment Breakdown Insurance)
- **Casualty insurance** insures against accidents, not necessarily tied to any specific property.
- **Credit insurance** pays some or all of a loan back when certain things happen to the borrower such as unemployment, disability, or death.
- Financial loss insurance protects individuals and companies against various financial risks. For example, a business might purchase cover to protect it from loss of sales if a fire in a factory prevented it from carrying out its business for a time. Insurance might also cover failure of a creditor to pay money it owes to the insured. **Fidelity bonds** and **surety bonds** are included in this category.
- **Health insurance** covers medical bills incurred because of sickness or accidents.
- **Liability insurance** covers legal claims against the insured. For example, a homeowner's insurance policy provides the insured with protection in the event of a claim brought by someone who slips and falls on the property, and brings a lawsuit for her injuries. Similarly, a doctor may purchase liability insurance to cover any legal claims against him if his negligence (carelessness) in treating a patient caused the patient injury and/or monetary harm. The protection offered by a liability insurance policy is two-fold: a legal defense in the event of a

lawsuit commenced against the policyholder, plus indemnification (payment on behalf of the insured) with respect to a settlement or court verdict.

- **Life insurance** provides a cash benefit to a decedent's family or other designated beneficiary, and may specifically provide for burial and other final expenses.
 - Annuities provide a stream of payments and are generally classified as insurance because they are issued by insurance companies and regulated as insurance. Annuities and pensions that pay a benefit for life are sometimes regarded as insurance against the possibility that a retiree will outlive his or her financial resources. In that sense, they are the complement of life insurance.
- **Total permanent disability insurance** insurance provides benefits when a person is permanently disabled and can no longer work in their profession, often taken as an adjunct to life insurance.
- **Locked Funds Insurance** is a little known hybrid insurance policy jointly issued by governments and banks. It is used to protect public funds from tamper by unauthorised parties. In special cases, a government may authorise its use in protecting semi-private funds which are liable to tamper. Terms of this type of insurance are usually very strict. As such it is only used in extreme cases where maximum security of funds is required.
- **Marine Insurance** covers the loss or damage of goods at sea. Marine insurance typically compensates the owner of merchandise for losses sustained from fire, shipwreck, etc., but excludes losses that can be recovered from the carrier.
- Nuclear incident insurance — damages resulting from an incident involving radioactive materials is generally arranged at the national level. (For the United States, see Price-Anderson Nuclear Industries Indemnity Act.)
- Environmental Liability Insurance protects the insured from bodily injury, property damage and cleanup costs as a result of the dispersal, release or escape of a pollutant.
- **Political risk insurance** can be taken out by businesses with operations in countries in which there is a risk that revolution or other political conditions will result in a loss.
- Professional Indemnity Insurance is normally a mandatory requirement for professional practitioners such as Architects, Lawyers, Doctors and Accountants to provide insurance cover against potential negligence claims. Non licensed professionals may also purchase malpractice insurance, it is commonly called Errors and Omissions Insurance and covers a service provider for claims made against them that arise out of the performance

of specified professional services. For instance, a web site designer can obtain E&O insurance to cover them for certain claims made by third parties that arise out of negligent performance of web site development services.

- **Property insurance** provides protection against risks to property, such as fire, theft or weather damage. This includes specialized forms of insurance such as **fire insurance**, flood insurance, **earthquake insurance**, **home insurance**, inland marine insurance or **boiler insurance**.
- **Terrorism insurance**
- **Title insurance** provides a guarantee that title to real property is vested in the purchaser and/or mortgagee, free and clear of liens or encumbrances. It is usually issued in conjunction with a search of the public records done at the time of a real estate transaction.
- **Travel insurance** is an insurance cover taken by those who travel abroad, which covers certain losses such as medical expenses, lost of personal belongings, travel delay, personal liabilities.. etc.
- Workers' compensation insurance replaces all or part of a worker's wages lost and accompanying medical expense incurred due to a job-related injury.

A single policy may cover risks in one or more of the above categories. For example, car insurance would typically cover both property risk (covering the risk of theft or damage to the car) and liability risk (covering legal claims from say, causing an accident). A **homeowner's** insurance policy in the U.S. typically includes property insurance covering damage to the home and the owner's belongings, liability insurance covering certain legal claims against the owner, and even a small amount of health insurance for medical expenses of guests who are injured on the owner's property.

Potential sources of risk that may give rise to claims are known as "perils". Examples of perils might be fire, theft, earthquake, hurricane and many other potential risks. An insurance policy will set out in details which perils are covered by the policy and which are not.

Types of insurance companies

Insurance companies may be classified as

- *Life* insurance companies, who sell life insurance, annuities and pensions products.
- *Non-life* or *general* insurance companies, who sell other types of insurance.

In most countries, life and non-life insurers are subject to different regulations, tax and accounting rules. The main reason for the distinction between the two types of company is that life business is very long term in nature — coverage for life assurance or a pension can cover risks over many decades. By contrast, non-life insurance cover usually covers a shorter period, such as one year.

Insurance companies are generally classified as either *mutual* or *stock* companies. This is more of a traditional distinction as true mutual companies are becoming rare. Mutual companies are owned by the policyholders, while stockholders, (who may or may not own policies) own stock insurance companies.

Reinsurance companies are insurance companies that sell policies to other insurance companies, allowing them to reduce their risks and protect themselves from very large losses. The reinsurance market is dominated by a few very large companies, with huge reserves.

Captive Insurance companies may be defined as limited purpose insurance companies established with the specific objective of financing risks emanating from their parent group or groups. This definition can sometimes be extended to include some of the risks of the parent company's customers. In short terms, it is an in-house self-insurance vehicle. Captives may take the form of a "pure" entity (which is a 100% subsidiary of the self-insured parent company); of a "mutual" captive (which insures the collective risks of industry members); and of an "association" captive (which self-insures individual risks of the members of a professional, commercial or industrial association). Captives represent commercial, economic and tax advantages to their sponsors due to the reductions on costs they help create, the ease for insurance risk management and the flexibility for cash flows they generate. Additionally, they may provide coverage of risks which are neither available nor offered in the traditional insurance market at reasonable prices.

The types of risk that a captive can underwrite for the parent include property damage, public and products liability, professional indemnity, employee benefits, employers liability, motor and medical

aid expenses. The captive's exposure to such risks may be limited by the use of reinsurance.

Captives are becoming an increasingly important component of the risk management and risk financing strategy of their parent. This can be understood against the following background:

- heavy and increasing premium costs in almost every line of coverage;
- difficulties in insuring certain types of fortuitous risk;
- differential coverage standards in various parts of the world;
- rating structures which reflect market trends rather than individual loss experience;
- insufficient credit for deductibles and/or loss control efforts.

There are also companies known as 'insurance consultants'. Like a mortgage broker, these companies are paid a fee by the customer to shop around for the best insurance policy amongst many companies .

Similar to an insurance consultant, an 'insurance broker' also shops around for the best insurance policy amongst many companies. However, with insurance brokers, the fee is usually paid in the form of commission from the insurer that is selected rather than directly from the client.

Third Party Administrators are companies that perform underwriting and sometimes claims handling services for insurance companies. These companies often have special expertise that the insurance companies do not have.

Life insurance and saving

Certain life insurance contracts accumulate cash values, which may be taken by the insured if the policy is surrendered or which may be borrowed against. Some policies, such as annuities and [endowment](#) policies, are financial instruments to accumulate or liquidate wealth when it is needed. See [life insurance](#).

In many countries, such as the U.S. and the UK, tax law provides that the interest on this cash value is not taxable under certain circumstances. This leads to widespread use of life insurance as a tax-efficient method of saving as well as protection in the event of early death.

In U.S., interest income of life insurance policy (or annuity) is income tax deferred in general. However, its tax deferred benefit may be offset by a low return in some cases. This depends upon the insuring company, type of policy and other variables (mortality, market return, etc.). In 2000 and 2001 permanent life insurance had the second greatest investment return besides real estate. Also, other income tax saving vehicles (i.e. IRA, 401K or Roth IRA) appear to be better alternatives for value accumulation. Combination of low-cost term life insurance and higher return tax-efficient retirement account can achieve better performance.

Size of global insurance industry

Global insurance premiums grew by 9.7% in 2004 to reach \$3.3 trillion. This follows 11.7% growth in the previous year. Life insurance premiums grew by 9.8% during the year due to rising demand for annuity and pension products. Non-life insurance premiums grew by 9.4% as premium rates increased. Over the past decade, global insurance premiums rose by more than a half as annual growth fluctuated between 2% and 10%.

Advanced economies account for the bulk of global insurance. With premium income of \$1,217bn in 2004, North America was the most important region, followed by the EU (\$1,198bn) and Japan (\$492bn). The top four countries accounted for nearly two-thirds of premiums in 2004. The United States and Japan alone accounted for a half of world insurance, much higher than their 7% share of the global population. Emerging markets accounted for over 85% of the world's population but generated only 10% of premiums. The volume of UK insurance business totalled \$295bn in 2004 or 9.1% of global premiums. [\[3\]](#)

Financial viability of insurance companies

Financial stability and strength of the insurance company should be a major consideration when purchasing an insurance contract. An insurance premium paid currently provides coverage for losses that might arise many years in the future. For that reason, the viability of the insurance carrier is very important. In recent years, a number of insurance companies have become insolvent, leaving their policyholders with no coverage (or coverage only from a government-backed insurance pool with less attractive payouts for losses). A number of independent rating agencies, such as Best's, provide information and rate the financial viability of insurance companies.

Controversies

Insurance insulates too much

By creating a "security blanket" for its insureds, an insurance company may inadvertently find that its insureds may not be as risk-averse as they should be (since the insured assumes the risk belongs to the insurer). This problem is known to the insurance industry as moral hazard. To reduce their own financial exposure, insurance companies have contractual clauses that mitigate their obligation to provide coverage if the insured engages in some kind of behavior that grossly magnifies their risk of loss or liability.

For example, life insurance providers may require higher premiums or deny coverage to people who work hazardous occupations or engage in dangerous sports. Liability insurance providers do not provide coverage for liability arising from intentional torts committed by the insured. Even if a provider was irrational enough to try to provide such coverage, it is against the public policy of most countries to allow such insurance to exist, and thus it is usually illegal.

Complexity of insurance policy contracts

Insurance policies can be complex and some policyholders may not understand all the fees, regulation and coverages included in a policy. As a result, people could buy policies at unfavorable terms. In response to these issues, governments often make detailed regulations that set down minimum standards for policies and govern how they may be advertised and sold.

Many individuals purchase policies through an insurance broker. The broker can counsel the policyholder on which coverage to purchase and limitations of the policy. A broker generally holds contracts with many insurers which allows the broker to "shop" the market for the best rates and coverage possible.

People may also purchase policies through a "producer" (a seller of insurance). Unlike a broker, who represents the policyholder, a producer represents the insurance company from whom the policyholder buys. A producer can represent more than one company. In the United States, these people are known as "resident producers" in the states where they are licensed. In some states (such as Michigan), insurance brokers are not allowed to operate because the cheapest

rates may not be in the best interest of the policyholder.

Redlining

Redlining is the practice of some insurance companies to deny the issuance of coverage in specific geographic areas, with the purported reason of an increased likelihood of risk; the validity of the assessment is often attributed to discrimination.

Evaluation of risk, when an insurer determines a premium or premium rate structure, considers quantifiable factors, including location, credit scores, gender, occupation, marital status, and education level. However, the use of these essential factors, whether inappropriately or not, are often considered to be unfair or discriminatory by some consumers and their advocates, sometimes leading to political disputes about insurers' determination of premiums and possible government intervention to limit the factors used.

A refutation to this is that the job of an insurance underwriter is to properly categorize a given risk as to the likelihood that the loss will occur. Any factor that causes a greater likelihood of loss should in theory, be charged a higher rate. This is a basic principle of insurance and must be followed for insurance companies or groups to operate properly, even for non-profit organizations. Thus, discrimination of potential insureds by legitimate factors is central to insurance. Therefore the only thing that can be considered legitimately unfair are practices that discriminate against a given group without actual factors that show that the group is a higher risk. So, eliminating real factors discriminates against other insureds by forcing them to bear part of the cost of the disallowed perceived factors.

Health insurance

Health insurance, which is coverage for individuals to protect them against medical costs, is a highly charged and political issue in the United States, which does not have socialized health coverage. In theory, the market for health insurance provision should function in a manner similar to other insurance coverages, but the skyrocketing cost of health coverage has disrupted markets around the globe, but perhaps most glaringly in the U.S. Please see [health insurance](#) for a discussion of this category.

Dental insurance

Dental insurance, like health insurance, is coverage for individuals to protect them against dental costs. Dental insurance usually goes hand-in-hand with health insurance, with most people in the United States receiving it included in their health insurance plan from their employer. Along with receiving dental insurance from your employer, there are ways to receive dental insurance through resellers and companies for individuals and families; although this way tends to be too expensive for most people.

Insurance Patents

New insurance products can now be protected from copying with a business method patent. This may lead to the more rapid introduction of new insurance products as insurance companies will invest more heavily in new product development if they can be reasonably assured that their patents will keep those products from being copied.

A recent example of a new insurance product that is patented is telematic [auto insurance](#). It was independently invented and patented by a major U.S. auto insurance company, Progressive Auto Insurance ([U.S. patent 5,797,134](#)) and a Spanish independent inventor, Salvador Minguíjon Perez ([European Patent EP0700009B1](#)).

The basic idea of telematic auto insurance is that a driver's behavior is monitored directly while the person drives and this information is transmitted to an insurance company. The insurance company then assesses the risk of that driver having an accident and charges insurance premiums accordingly. A driver that drives a lot of distance at high speed, for example, will be charged a higher rate than a driver that drives small distances at low speed.

A British auto insurance company, Norwich Union, has taken a license to both the Progressive patent and Perez patent. They have made additional investments in infrastructure and developed a commercial offering called "Pay As You Drive" or PAYD.

Many independent inventors are in favor of patenting new insurance products since it gives them protection from big companies when they bring their new insurance products to market. Independent inventors account for 70% of the new U.S. patent applications in this area.

Many insurance executives are opposed to patenting insurance products because it creates a new risk for them. The Hartford insurance company, for example, had to recently pay US\$80 million to an independent inventor, Bancorp Services, in order to settle a patent infringement and theft of trade secret lawsuit for a new type of corporate owned life insurance product invented and patented by Bancorp.

There are currently about 150 new patent applications on insurance inventions filed per year in the United States. ([Source: Insurance IP Bulletin, December 15, 2005](#)). Only about 20–30 patents per year, however, are actually issued.

The insurance industry and rent seeking

Certain insurance products and practices have been described as rent seeking by critics. That is, insurance companies have been alleged to have certain products or practices that are only useful due to certain government laws (especially tax laws), and that the insurance industry in these cases generally adds no economic value but instead supports politicians who will continue the legal regime which gives the insurance company these benefits. For example, in the United States the current tax rules generally allow owners of variable annuities (see [annuity \(US financial products\)](#)) and variable life insurance (see [variable universal life insurance](#)) to invest in the stock market and defer or eliminate paying any taxes until withdrawals are made. Sometimes this tax deferral is the only reason some individuals use these products instead of a mutual fund. Another example is the legal infrastructure which allows life insurance to be held in an irrevocable trust which is used to pay an estate tax while the proceeds itself are immune from the estate tax.

Glossary

- 'Combined Ratio' = loss ratio + expense ratio. Loss Ratio is calculated by dividing the amount of losses by the amount of earned premium. Expense ratio is calculated by dividing the amount of operational expenses by the amount of earned premium. A lower number indicates a better return on the amount of capital placed at risk by an insurer.

Quote

- Hank Greenberg told his board of directors, "you can't even spell 'insurance'"[\[4\]](#) (hearsay, April 2005)

External links

- [Insurance industry statistics in the world.](#)
- [Insurance industry statistics in the U.S.](#)
- [Life Insurance in the United States through World War I](#)
- [Columbia Encyclopedia: The History of Insurance](#)
- [Congressional Research Service \(CRS\) Reports regarding the U.S. Insurance industry](#)
- [The British Library - finding information on the insurance industry \(UK bias\)](#)
- [Insurance in Ancient Iran](#)

A

Accidental death and dismemberment insurance |
Alcohol exclusion laws | Annuity (US financial products)

Accidental death and dismemberment insurance

Accidental death and dismemberment insurance (also known as *AD&D*) covers death or dismemberment as a result of an accident. In contrast to **life insurance**, AD&D generally would not pay survivor benefits in the case of death by illness. AD&D premiums are generally cheaper than life insurance because the incidence of death by accident is lower than death by natural causes. Dismemberment refers to the loss of two limbs or the complete loss of sight (ie: blindness), and is a rider (attached endorsement) to a policy.

Up

Alcohol exclusion laws

Alcohol exclusion laws permit insurance companies to deny claims associated with the consumption of alcohol. They were passed in the 1940s in the United States to discourage people from drinking alcoholic beverages and to save insurance companies money from alcohol-related claims ([Ensuring Solutions to Alcohol Problems](#), George Washington University Medical Center, 2005). It was believed that people would be less likely to drive while impaired or intoxicated if insurance companies could deny medical payments or other claims associated with any injuries associated with the consumption of alcoholic beverages. Over 30 states currently have alcohol exclusion laws.

There is to date no scientific evidence that alcohol exclusion laws discourage drunk driving. In fact, some argue that these laws discourage physicians and hospitals from testing accident victims for possible alcohol in their blood (BAC). That's because insurance companies can refuse to pay doctors and hospitals for treating patients found to have alcohol in their bodies (Rivara, 2000). In short, screening for alcohol could lead to the loss of payments from insurance companies. Because of this, there is concern that alcohol exclusion laws help drunken drivers avoid detection and increase the likelihood that they will repeat their crime in the future (American Medical Association, 2004; Cimon, 2004; Gentilello *et al*, 1999). Since 2001, seven states have repealed or amended their alcohol exclusion laws and several are currently considering such action.

The insurance industry supports alcohol exclusion laws. On the other hand, the professional organization which regulates that industry, the National Association of Insurance Commissioners, has voted unanimously to recommend the repeal of alcohol exclusionary laws. Other groups supporting their repeal include the National Conference of Insurance Legislators, the American Bar Association, the American College of Emergency Physicians, Mothers Against Drunk Driving, the National Commission Against Drunk Driving, and the American Medical Association.

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[Up](#)

Annuity (US financial products)

An **annuity** is an [insurance contract](#). An annuity contract is created when an individual gives the insurance company money which may grow tax deferred and then can be distributed back to the owner in several ways.

General

Annuity contracts in the United States are defined by the Internal Revenue Code and regulated by the individual states. Annuities have features of [life insurance](#) and investment products.^[1] In the US, annuity contracts are only allowed to be sold by [insurance companies](#), although private annuity contracts may be arranged between donors to non-profits to reduce taxes. Insurance companies are regulated by the states, so contracts or options that may be available in some states may not be available in others. However, their tax treatment is dictated by the Internal Revenue Code. There are two types of annuity contracts: the **immediate annuity**, which guarantees payments for a period of years or the lifetime of an individual or couple, and the **deferred annuity**, which grows tax deferred until such time as the annuity contract is annuitized (converted into an immediate annuity) or cashed in (either in periodic withdrawals or in a lump sum).

Immediate Annuity

The term annuity in financial theory is most closely related to what is today called an *immediate annuity*. This is an [insurance policy](#) which in exchange for a sum of money, makes a series of payments. These payments may be either level or increasing periodic payments for a fixed term of years or until the ending of a life or two lives, or even whichever is longer.

The overarching characteristic of the immediate annuity is that it is a vehicle for distributing savings with a tax deferred growth factor. A common use for an immediate annuity might be to provide a pension income. In the US, the tax treatment of an immediate annuity is that every payment is a combination of a return of principal (not taxed) and income (taxed at normal income rates, not capital gain rates.) When a deferred annuity is annuitized, it works like an immediate annuity from that point on, but with a lower cost basis and thus more of the payment is taxed.

Annuity with Period Certain

This type of Immediate Annuity pays the annuitant for a designated number of years, and is used to fund a need that will end when the period is up (an example of this might be a life insurance policy). Thus this option is not necessarily suitable for an individuals retirement income, as the person may outlive the number of years the annuity will pay.

Life annuities

A life or lifetime immediate annuity is used to provide an income for the life of the annuitant similar to a defined benefit or pension plan.

A life annuity works somewhat like a loan that is made by the purchaser (contract owner) to the issuing (insurance) company, who then pays back the original capital or principal (which isn't taxed) with interest and/or gains (which is taxed as ordinary income) to the *annuitant* on whose life the annuity is based. The assumed period of the loan is based on the life expectancy of the annuitant. In order to guarantee that the income continues for life, the insurance company relies on a concept called *cross-subsidy* or the "law of large numbers". Because an *annuity population* can be expected to have a distribution of

livespans around the population's mean (average) age, those dying earlier will give up income to support those living longer whose money may otherwise run out.

A life annuity is most commonly used to transfer the risk that the annuitant will run out of life before the insurance company runs out of money. Sometimes a portion of that money will purchase a life insurance policy which will guarantee that the heirs of the annuitant still receive an inheritance.

Life annuity variants

For an additional expense, (either by an increase in payments (premium) or decrease in benefits) an annuity or benefit rider can be purchased on another life such as a spouse, family member or friend whose life the annuity is wholly or partly guaranteed. For example, it is common to buy an annuity which will continue to pay out to the spouse of the annuitant after death, for as long as the spouse survives. The annuity paid to the spouse is called a reversionary annuity or survivorship annuity. However, if the annuitant is in good health, it may be more beneficial to select the higher payout option on their life only and purchase a life insurance policy that would pay income to the survivor.

Other features such as a minimum guaranteed payment period irrespective of death, known as life with period certain, or *escalation* where the payment rises by inflation or a fixed rate annually can also be purchased.

Life with period certain annuities are more palatable to people who have accumulated money and would not like to lose all of it if they were to die soon after annuitization. At least the period certain payments will be made to their [beneficiary](#). However, a viable alternative is to purchase a single premium life policy that would cover the lost premium in the annuity.

Impaired life annuities for smokers or those with a particular illness are also available from some insurance companies. Since the life expectancy is reduced, the annual payment to the purchaser is raised.

Life annuities are priced based on the probability of the nominee surviving to receive the payments. Longevity insurance is a form of annuity that defers commencement of the payments until very late in life. A common longevity contract would be purchased at or before retirement but would not commence payments until 20 years after retirement. If the nominee dies before payments commence there is no payable benefit. This drastically reduces the cost of the annuity while still providing protection against outliving one's resources.

Deferred Annuity

The second usage for the term *annuity* came into being during the 1970s. This contract is more correctly referred to as a *deferred annuity* and is chiefly a vehicle for accumulating savings, and eventually distributing them either in the manner of an immediate annuity or as a lump-sum payment.

All varieties of deferred annuities owned by individuals have one thing in common: any increase in account values is *not* taxed until those gains are withdrawn. This is also known as tax-deferred growth.

A deferred annuity which grows by interest rate earnings alone is correctly called a *fixed deferred annuity* (FAs). A deferred annuity that permits allocations to stock or bond funds and for which the account value is not guaranteed to stay above the initial amount invested is correctly called a *variable annuity* (VAs).

A new category of deferred annuities has emerged in 1995, called *equity indexed annuity* (EIA). [2] Equity indexed annuities may have features of both deferred annuities just described. The insurance company typically guarantees a minimum return for EIA. An investor can still lose money if he or she cancels (or surrenders) the policy early, before a "break even" period. An over simplified EIA rate of return is equal to the "participation rate" multiplied by a target stock market index's performance excluding dividends. Interest rate caps, or administrative fee may be applicable.

There are two phases to a deferred annuity. The accumulation phase is the time between initial purchase and annuitization. The annuitization phase starts when the annuity is turned into a stream of payments. Before annuitization, the deferred annuity contract may allow the purchase of additional (premium) payments to the contract, increasing the contract's value. It should be noted that less than 1% of deferred annuities are annuitized by annuitants.

Deferred annuities in the United States have an advantage that all capital gains and income are tax deferred until withdrawn. In theory, this allows more money to be put to work while the savings are accumulating, leading to higher returns. A disadvantage, however, is that when a variable annuity is withdrawn or inherited the interest/gains are treated as ordinary income and are taxed as such.

Features (aka...Benefits, Riders, Guarantees)

A wide variety of features and guarantees have been developed by insurance companies in order to make annuity products more

attractive. These include death and living benefit options, extra credit options, account balance guarantees, spousal continuation benefits, reduced CDSC (Contingent Deferred Sales Charge) or surrender charges and combinations thereof. Each feature or benefit added to a contract will typically be accompanied by an additional expense either directly (billed to client) or indirectly (inside product).

Deferred annuities are usually divided into two different kinds:

- Fixed Annuities offer some sort of guaranteed rate of return over the life of the contract. In general these are often positioned to be somewhat like bank CDs, and offer a rate of return competitive to CD's of similar time frames (with different tax treatments as previously mentioned). However, many fixed annuities do not have a completely fixed rate of return over the life of the contract, but rather a guaranteed minimum rate and a first year "teaser rate". The rate after the first year is often any amount that the insurance company wants to pay, but at least the minimum amount. Unlike most CD's, there are usually some clauses in the contract to allow a percentage of the interest and/or principal to be withdrawn early and without penalty. Normally, fixed annuities become fully liquid upon death.
- Variable Annuities allow money to be invested in separate accounts (similar to mutual funds) in a tax deferred manner.[\[3\]](#) Overall their primary use is to allow someone to engage in tax deferred investing for retirement at amounts greater than permitted by individual retirement or 401(k) plans. In addition, many variable annuity contracts offer a guaranteed minimum rate of return (either for a future withdrawal and/or in the case of the owners death), even if the underlying separate account investments perform poorly. This can be attractive to people uncomfortable investing in the equity markets without the guarantees. However, an investor will pay for each benefit provided by a variable annuity, since insurance companies in general do not write money losing contracts; look at the charges carefully. These products are often heavily criticized as being sold to the wrong persons, who could have done better doing something else, since the commissions paid by this product are often very high relative to other investment products.

There are several types of these performance guarantees, and many times one can choose them a la carte, with higher charges for guarantees that are riskier for the insurance companies. There are guaranteed minimum death benefits (GMDBs), which can be received only if the owner of the annuity contract, or the covered annuitant,

dies.

These GMDBs come in various flavors, in order of increasing risk to the insurance company:

- Return of premium (a guarantee that you will not have a negative return)
- Roll-up of premium at a particular rate (a guarantee that you will achieve a minimum rate of return, greater than 0)
- Maximum anniversary value (looks back at account value on the anniversaries, and guarantees you will get at least as much as the highest values upon death)
- Greater of maximum anniversary value or particular roll-up

Even riskier for insurance companies are the guaranteed living benefits, which tend to be elective. Unlike death benefits, which the contractholder generally can't time, living benefits have significant risk for the insurance companies as contractholders will likely exercise these benefits when they are worth the most. Annuities with guaranteed living benefits (GLBs) tend to have very high fees.

Some GLB examples, in no particular order:

- Guaranteed minimum income benefit (a guarantee that one will get a minimum income stream upon annuitization at a particular point in the future.)
- Guaranteed minimum accumulation benefit (a guarantee that the account value will be at a certain amount at a certain point in the future)
- Guaranteed minimum withdrawal benefit (a guarantee similar to the income benefit, but one that doesn't require annuitizing)
- Guaranteed for-life income benefit (a guarantee similar to a withdrawal benefit, but will pay you for as long as you live and does not require annuitization)

Criticisms of deferred annuities

Deferred annuities are criticized by financial gurus, because they often generate a higher commission than other forms of investment and they also typically have surrender charges, in which a certain percentage of the account value is taken by the insurance company as a fee in the case of early withdrawal of too much money. However, as most contracts allow you to take out up to 10% per year with no penalty, this point is moot for individuals who are taking an income below this amount from the annuity.

A controversial practice of insurance sales is the selling of

insurance contracts within an IRA or 401(k) plan in the US. Since these investment vehicles are already tax deferred, investors do not receive additional tax shelters from the annuities. It is possible for a performance guarantee alone to make an annuity worthwhile when cutting out the tax deferral benefit. [\[4\]](#)

Taxation

In the U.S. Internal Revenue Code, the growth of the annuity value during the accumulation phase is tax deferred, that is, not subject to current income tax for annuities owned by individuals. The tax deferred status of deferred annuities has led to their common usage in the United States. Under the US tax code, the benefits from annuity contracts do not always have to be taken in the form of a fixed stream of payments (annuitization), and many of the contracts are bought primarily for the tax benefits rather than to get a fixed stream of income. If an annuity was used in a qualified pension plan or an IRA funding vehicle, then 100% of the annuity payment is taxable as current income upon distribution. If the annuity contract is purchased with after-tax dollars, then the contract holder upon annuitization recovers his basis pro-rata in the ratio of basis divided by the expected value according to the IRS regulations from Section 1.72-5. After the taxpayer has recovered all his basis, then 100% of the payments thereafter are subject to ordinary income tax.

Insurance company default risk

An investor should consider the financial strength of the insurance company that writes annuity contracts. Government laws governing insurance company defaults vary according to locations.

Compensation for advisors or salespeople

Deferred annuities, including fixed, indexed and variable, typically pay the advisor or salesperson 1 to 12 percent of the amount invested as a commission, with possible trail options of 25 basis points to one percent. Sometimes the advisor can select his payout option, which might be either 7 percent up front, or 5% up front with a 25 basis point trail, or 1-3% up front with a 1% trail.

Some firms allow an investor to pick an annuity share class, which determines the salesperson's commission schedule. The main variables are the up-front commission, and the trailing commission.

"No-load" variable annuities are available from several no-load mutual fund companies. "No-load" refers to having no sales commissions, and surrender charges. Even these lower cost variable annuities often make sense only after an investor has exhausted all other forms of tax shelters.

References

1. [‘ US SEC Answers on Annuities](#)
2. [‘ US SEC Answers on Equity-Indexed Annuities](#)
3. [‘ Variable Annuities: What You Should Know](#)

External links

- [National Association of Variable Annuities](#)
- [History of Variable Annuities](#)
- [National Association of Insurance Commissioners](#)

B

[Bancassurance](#) | [Beneficiary](#) | [Boiler insurance](#) | [Bonus-Malus](#) |
[Buy term and invest the difference](#)

Bancassurance

Bancassurance is the term used to describe the sale of insurance products in a bank. The word is a combination of "banc" and "assurance" signifying that both banking and insurance is provided by the same corporate entity. The usage of the word picked up as banks and insurance companies merged and banks sought to provide insurance, especially in markets that have been liberalised recently. It is a controversial idea, and many feel it gives banks too great a control over the financial industry.

In some countries, bancassurance is still largely prohibited, but it was recently legalized in countries such as the United States, when the Glass-Steagall Act was repealed after the passage of the Gramm-Leach-Bliley Act.

Wealth management for High Net Worth and Ultra High Net Worth customers has been pioneered by Lombard International and the function is known as Privatbancassurance.

[\[1\]](#)

Beneficiary

A **beneficiary** in the broadest sense is a natural person or other legal entity who receives money or other benefits from a benefactor. The beneficiary of a life insurance policy, for example, is the person who receives the payment of the amount of insurance after the death of the insured. The beneficiaries of a trust are the persons with equitable ownership of the trust assets, although legal title is held by the trustee. The term is also used in the context of a letter of credit for the party receiving the money related thereto. Beneficiaries in other contexts are known by other names: for example, the beneficiaries of a will are called *devisees* or *legatees* according to local custom.

A series of beneficiaries may be designated in many cases to designate where the assets will go if the primary beneficiary or beneficiaries are not alive or do not qualify under the restrictions in the given contract or legal instrument. Most commonly the restriction is that the beneficiary be alive, which, if not true, allows the assets to pass to the contingent beneficiaries. Other restrictions such as being married or more creative ones can be used by a benefactor to attempt to control the behavior of the beneficiaries. Some situations such as retirement accounts do not allow any restrictions beyond death of the primary beneficiaries, but trusts allow any restrictions that are not illegal or for an illegal purpose.

The concept of a "beneficiary" will also frequently figure in contracts other than insurance policies. A third party beneficiary of a contract is a person who, although not a party to the contract, the parties intend will benefit from its provisions. A software distributor, for example, may seek provisions protecting its customers from infringement claims. A software licensor may include provisions in its agreements which protect those who provided code to that licensor.

Boiler insurance

Boiler insurance is a type of [property insurance](#) that pays accidental losses to machinery and equipment. Although it is called boiler insurance it can actually cover just about any device that uses, transmits or generates mechanical or electrical power; of course certain exclusions apply.

Standard [property insurance](#) policies normally exclude coverage for losses caused by mechanical breakdown, artificially generated electrical current, and explosions of high pressure steam boilers. Boiler insurance provides a way to buy coverage for those types of losses.

Boiler insurance can cover:

- specific objects - "A specific boiler identified by year and/or serial number"
- blanket objects - "blanket all electric motors"
- comprehensive - "all objects unless specifically excluded"

In the United States, companies providing boiler insurance will generally perform jurisdictionally required boiler inspections as a "free service" and require a passing inspection as a condition of coverage. Twenty percent of a Boiler and Machinery policy is dedicated to boiler inspection.

Boiler insurance may alternatively be referred to as "equipment breakdown insurance", "machinery and equipment insurance" or any other such name.

Bonus-Malus

In [insurance](#), a **Bonus-malus system** (BMS) is a system that adjusts the premium paid by a customer according to his individual claim experience.

Bonus usually is a discount in the premium which is given on the renewal of the policy if no claim is made in the previous year. Malus is an increase in the premium if there is a claim in the previous year. Bonus-malus systems are very common in automobile insurance.

The fundamental principle of BMS is that the higher the claim frequency of a policyholder, the higher the insurance costs that on average are charged to the policyholder. This principle is also valid in an insurance arrangement consisting of a high maximum [deductible](#) which is common to all policyholders.

Bonus malus in Automobile Insurance

Most insurers around the world have introduced some form of merit-rating in [automobile third party liability insurance](#). Such systems penalize at-fault accidents by premium surcharges and rewards claim-free years by discounts.

The most usual BMS divides drivers by classes, where each class has its own discount or surcharge that is applied to the basic premium. A claim-free year implies in a decline of one or more degrees on the Bonus/Malus class table on the anniversary of the contract. A claim entails an increase of a given number of degrees on the Bonus/Malus scale on the anniversary of the contract. Generally, one degree corresponds to a 5% discount or surcharge. The starting class may depend on the driver's age, sex, place of residence, the car's horsepower or even the car's color. Each country has a different legislation, which rules how many degrees an insurer may increase or decrease, the maximum bonus or malus allowed and which statistics insurers can use to evaluate the starting class of a driver.

A BMS usually has an effect on road safety statistics, as it stimulates drivers to be careful and avoid accidents that would lead to the loss of bonus.

Bonus Hunger

There is a basic question under Bonus-malus system based on insurance customer's point of view, that is, "Should an insurance customer carry an incurred loss himself, or should he make a claim to

the insurance company?”. Hence, an insurance customer prefers to choose self-financing an occurred loss by carrying a small loss himself in order to avoid an increased future premium, instead of financing the loss by compensation from the insurance company. This strategy is called bonus hunger of the insurance customer. In this strategy, the insurance customer prefers the most profitable financial alternative, after a loss occurrence. A well-designed Bonus-malus system must take bonus hunger into consideration.

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Buy term and invest the difference

Buying term and investing the difference is a concept involving [term life insurance](#) and investment strategies that provide individuals an alternative to [permanent life insurance](#). Generally speaking term insurance premiums are considerably less expensive in the short term than permanent life insurance for an individual for the same benefit amount. Permanent programs are more expensive because they typically combine some form of cash accumulation with the insurance program as a single package. Consumers making use of the "buy term invest the difference" concept, separate their investments from their insurance by setting aside money every month equal to the premium that a permanent plan would require, then use a portion of this money for the term premium and place the rest in a tax-deferred investment vehicle.

= = Cases for and against implementing the strategy = =

The advantage of this strategy, if implemented correctly, are obviation of insurance, immediate accumulation of investment moneys, more investment options that allow for similar tax advantages, and return of cash accumulation. Other advantages include elimination of loans and stability in the death benefit.

Obviate the need for permanent insurance

Pros

This viewpoint assumes consumers want to [self insure](#) and will eventually be able to obviate or eliminate the need for permanent insurance. They believe the responsibilities for which they purchase life insurance are temporary in nature. For example, consumers purchase life insurance to pay off their mortgage, consumer debts, provide education for dependants, and create cash reserves that replace the income of the breadwinner (this is called creating an instant estate.) In the event of the insured's death, most or all of these responsibilities can be resolved using the proceeds from the policy or policies. When the consumer has cash reserves large enough, they may self insure (assuming they prefer \$100,000 of cash to \$100,000 of insurance). Insurance terms may be a number of years in length (1, 5, 10, 20 years or more) which (in theory) should provide significant

time for the insured to invest and eliminate these responsibilities.

In the event these responsibilities are not eliminated at the end of the term, many insurers will allow the insured to renew their current policy (guaranteed renewal) or purchase a new policy (conversion) without being subject to the same qualifications, or underwriting, as a new insured person. The cumulative costs of renewing term insurance, however, can eventually cost much more than the cumulative cost of purchasing permanent life insurance once.

Cons

First of all, "Self Insure" is a misnomer, since a financial loss is not indemnified. Anyone adopting this strategy is simply retaining the risk and, ultimately, would be willing to accept a loss. For example, someone with a home worth \$500,000 who has \$1 Million in cash could cancel their fire insurance and self insure. If their house burns down, they have enough money to build another or buy another. They will still suffer a cash loss, however, since they have chosen to retain their own risk. If they have no claims that would have been settled by property insurance, they have saved the premiums they would have paid, along with the earnings on those premiums. In this case, it can be proven that they came out ahead by not buying insurance, but the risk was enormous.

Those who believe in buying Term Insurance and investing the difference in premium between a Term and Permanent policy must intend to obviate their need for life insurance, since the Term policy will eventually expire or become too expensive. If they are not disciplined enough to invest, pay off their debts, or assist their dependants in becoming independent, they still have a need for insurance. For individuals with additional responsibilities or an indefinite responsibility, this strategy would not be beneficial.

Term and Permanent Insurance both exist because a **need** for both exists. When selecting the proper type of insurance, it is necessary to take into account needs, wants, goals and means. Those who lean toward the "Buy Term and Invest The Difference" way of thinking are often looking at blanket solution to all financial problems related to life insurance and are not focused on everything that can be achieved by the use of life insurance.

Some people may have a permanent need for life insurance, especially when it comes to paying estate taxes. For those with substantial estates, the survivors may have to give up cash or sell off assets to pay the government. Life Insurance provides a very efficient way to pay estate taxes, especially with policies that pay out (at death) the initial amount of insurance and return all premiums paid as

well. Most proponents of Term + Investment are using this strategy to build up a large estate, but do not protect it for the next generation. It can be agreed that this is not necessarily a "need" but a "want." However, a want is a legitimate concern, since someone who builds an estate has the right to see it preserved if they see fit.

Immediate accumulation of investment money

Pros

Permanent or **whole life insurance** (life insurance that typically provides a death benefit for the lifetime of an insured person up to age 100) policies *usually* direct a portion of the premium payment to a sub-account within the policy, called cash value and the other portion to insurance. There are many different permanent life insurance products available with a range of options involving the cash value of the policy, including the ability to withdraw the cash value, loan against it, and to allow it to be drawn on to pay the insurance portion without additional premium payments. Ultimately, most permanent life insurance policies are combination of term insurance with a savings vehicle. Insurers may break down a policy into 2 components, the term insurance portion (the net amount at risk) and the cash value (the guaranteed amount).

The cash value in the sub-account can accumulate over the life of the policy depending on the policy, however it is not always available for the first several years of the program.

Universal and **Variable or Variable Universal** policies typically have immediate accumulation in the sub-account, but are typically not available for loans and are most often subject to a surrender charge for the first several years of the program (in the case of plans paying a premium close to the minimum, this is frequently in excess of the accumulation).

With the concept of buying term instead of permanent insurance, more investment vehicles are available, all of which are independent of the insurance program and remain in control of the insured if the insurance portion is canceled.

Cons

The con again is this approach requires discipline. As with budgeting, many consumers who reduce expenditures fail to invest the money saved, and simply allow it to be reabsorbed to become part of their monthly spending. An example is someone who quits smoking

thinking of all the money they'll save. looking at things a few years later, it is a rare occurrence for anyone to actually have a large amount of money in their special "non-smoking" investment account.

Investment options

Pros

This practice leaves the insured open to utilize whatever investment options they see fit. However to take full advantage of the tax benefits of permanent programs they should first be understood. Life insurance death benefits are never taxable, and cash value growth on permanent plans are tax-deferred as long as the policy is in force. If the policy is canceled (because the need for insurance is obviated) any accumulation in excess of Adjusted Cost Base (ACB) will be taxable. It is often thought that the only way to avoid these taxes is for the insured to die while the policy is in force (essentially making these monies unavailable to them). Depending on how the insured structures themselves premiums may be paid with pretax dollars (as a business obligation in a corporation for example), but are most often paid with after tax money. Variable plans provide the insured the opportunity to choose the investments, though the investment vehicle is still within the life insurance plan.

To attain similar tax advantages, the insured may make investments through a tax deferred vehicles, such as an annuity, variable annuity, IRA, Roth IRA or even 529. Monies applied to a traditional IRA are pretax dollars while those applied to a Roth IRA are after tax. Both investment vehicles grow tax-deferred, similar to cash accumulation; however money withdrawn from a Roth are not taxed. 529s are educational accounts, and annuities are another form of life insurance account. (see <http://www.irs.gov/pub/irs-pdf/p590.pdf> <http://www.irs.gov/retirement/article/0,,id=136868,00.html>)

Each program has provisions for accessing monies invested early as does permanent insurance; however the insurance death benefit is not impacted by accessing it.

Cons

Again this requires the implimenter to research investments and how to best take advantage of them.

Return of Cash Accumulation

Pros

Proponents of BTAID (Buy Term And Invest the Difference) indicate the greatest advantage of this concept is the return of cash accumulation. Many permanent policies are "cash surrender" life insurance, due to the fact that the cash accumulation always goes to the benefit of the insurance company who then uses the cash accumulation to pay a portion of the death benefit (this may vary per program see below). Each permanent program handles treatment of the cash value differently, but in the end the cash accumulation is always surrendered, even in return of premium policies or universal life plans that elect to pay the cash value option as well as the death benefit (see below).

To illustrate this, consumers may review the loan provisions on their policy. The cash accumulation could be drawn out of a permanent program as a loan, to be paid back with interest to the program. However, in the event of the insured's death, the death benefit is generally reduced by the amount of the loan. If the policy is cancelled, the loan is deducted from the cash accumulation and the net paid to the insured.

To contrast this with the BTAID strategy, the accumulation is in a separate investment owned by the insured. In the event the insured dies while the insurance policy is in force, the beneficiary of the investment receives the investment as well as the death benefit of insurance policy. If the insured dies when the policy is no longer in force, the beneficiary of the investment receives it, but no benefit from the insurance policy (which is in effect the same as canceling a permanent program).

Some permanent programs offer "Plus Fund" or "Return of Premiums" as options for receiving the death benefit and cash accumulation or premium. In these programs where the cash accumulation is "paid out" in essence the insurance company creates an additional insurance policy and fee on the cash accumulation. The accumulation insurance benefit and death benefit then pay out as the cash is still surrendered. The insured can attain the same effect by investing this small fee at the same rate as the company in their own account.

Cons

Most tax-favoured investment vehicles have a cap as to the contributions that can be made on an annual basis. Individuals in some jurisdictions, though, may have maximized all available programs that can provide tax deferral or tax relief. Overfunding A

Universal Life policy may provide an additional shelter. The proceeds may be passed on to their survivors and is also resistant to penalties brought from lawsuits. This has sometimes been criticized, since the insured person must die in order to pass on the savings with no tax consequences.

In recent years, strategies have evolved to increase the attractiveness of using a life insurance policy for investment. The IRP or "Insured Retirement Plan" is a program where a life insurance policy is overfunded for several years. When the cash value is to be accessed, the policyholder may assign the policy to a lending institution in exchange for a loan or line of credit. The plan is monitored so that the loan principal and interest accumulation can never exceed the proceeds payable on death of the insured. Upon death, the loan is repaid and the remainder can still be paid out tax-free to the beneficiary or the estate of the insured. This means that an insurance policy can be used to tax shelter money. Even this has a limit, though, since there will be a maximum annual contribution to the policy based on the age of the insured and the face amount.

The IRP, also known as "Life Insurance Leveraging" is a sophisticated strategy that is usually used with paid-up policies that have large face amounts and large amounts of cash within them. The plans need to be monitored carefully, but many financial institutions now have agreements with insurance companies to provide administration of such plans.

Other

Because of the increased premium at attained (then current) age, additional consideration should be given renewal or conversion of term insurance at the end of the original term. Also, purchasing annual renewable term insurance can add complexity to long-term investment strategies because premiums increase as the insured ages.

The basic forms of permanent insurance include:

- Simple **whole life insurance** is essentially decreasing benefit term insurance, as the net amount at risk decreases at the same rate as cash value accumulates. Eventually, the cash value equals the benefit amount.
- **Universal life insurance** is a form of whole life insurance in which, at a certain point, the cash value may be used to pay premiums and keep the policy active, or in force.
- Variable life insurance and **variable universal life insurance** are permanent insurances in which some or all of the cash value in the sub-account may be invested in mutual funds, money

markets, bonds, cash or other investment strategies.

Universal Life policies can now be structured with several different death benefit options such as:

Level Death Benefit - Where the face amount never changes regardless of cash accumulation within the plan

Indexed Death Benefit - Where the death benefit rises by a specific percentage each year (limits apply)

Level + Fund - Where the payout on death consists of the initial amount plus the cash or fund value

Level + ROP - Where the payout on death consists of the initial amount plus the return of all premiums paid

External links

- *What's wrong with your life insurance*, ISBN 0025293508.
- http://experts.longisland.com/moneymanage/print_article.php?ID=1623
- <http://www.smartmoney.com/college/investing/index.cfm?story=variablelife>
- [http://www.360financialliteracy.org/Financial + Guidance + Articles/Typical + Scenario.htm](http://www.360financialliteracy.org/Financial+Guidance+Articles/Typical+Scenario.htm)

C

Captive Insurance | Cash value | Casualty insurance | Coinsurance
| Contents insurance | Corporate-owned life insurance |
Credit insurance | Critical illness insurance | Crop insurance

Captive Insurance

Captive insurance companies are limited purpose [insurance](#) companies established with the specific objective of financing risks emanating from their parent group or groups, although they sometimes also insure some of the risks of the parent company's customers. In the simplest terms, it is an in-house self-insurance vehicle. Captives usually represent commercial, economic and tax advantages to their sponsors due to the reductions on costs they help create, the ease for insurance risk management and the flexibility for cash flows they generate. Additionally, they may provide coverage of risks which are neither available nor offered in the traditional insurance market at reasonable prices, and allow the relevant group direct access to [reinsurance](#) markets.

The administration of a captive is usually, though not always, outsourced to a specialised captive manager, who is often located in an offshore jurisdiction.

Types of Captive

There are several types of insurance captive, of which the most common are defined below:

- *Single Parent Captive* - is an insurance or reinsurance company formed primarily to insure the risks of its non-insurance parent or affiliates.
- *Association Captive* - is a company owned by a trade, industry or service group for the benefit of its members.
- *Group Captive* - is a company, jointly owned by a number of companies, created to provide a vehicle to meet a common insurance need.
- *Agency Captive* - is a company owned by an insurance agency or brokerage firm so they may reinsure a portion of their clients risks through that company.
- *Rent-a-Captive* - is a company that provides 'captive' facilities to others for a fee, while protecting itself from losses under individual programs, which are also isolated from losses under other programs within the same company. This facility is often used for programs that are too small to justify establishing their own captive.

Two other types of insurance company which have developed recently are special purpose vehicles (**SPV**) and segregated portfolio companies (**SPC**):

- *SPV* - Although used extensively in the past for various financing arrangements, recently they have been used for catastrophe bond issues.
- *SPC* - SPCs can be formed as a rent-a-captive facility to enable those companies who lack sufficient insurance premium volume, or who are averse to establishing their own insurance subsidiary, access to many of the benefits associated with an offshore captive.

Commercial Advantages

There are a number of commercial advantages to using a captives to provide a better means of risk management than the conventional market.

- *Cost.* Premiums charged by commercial insurers include amounts to cover the insurer's profit margin and overheads. Such overheads can be significant when considering insurers with large corporate structures to maintain.
- *Flexibility.* When the market is soft, the captive can take advantage of the low rates by reinsuring a relatively large proportion of its risks. The low cost of reinsurance allows the captive to build its reserve base. When the market hardens, the captive is able to retain a larger proportion of its risks, and can maintain cover for its parent even when commercial insurance is unavailable or prohibitively expensive.
- *Claims management.* The process of making a claim from a third party insurer can be long and involve a good deal of cost for the claimant. Where the insurer is a captive, the claims handling procedures can be dictated by management, cutting down on the delays and bureaucracy that are often a necessary part of the claims handling procedures of commercial insurers.
- *Claims experience benefits.*

Captives generally retain a portion of the overall risk and reinsure the remainder. For this reason, when claims experience is better than anticipated, the excess of net premiums over claims is retained by the group. The reinsurance taken out by the captive is tailored to minimise the group's exposure where claims experience is worse than projected.

The types of risk that a captive can underwrite for the parent include property damage, public and products liability, professional indemnity, employee benefits, employers liability, motor and medical aid expenses.

Captives are becoming an increasingly important component of the risk management and risk financing strategy of their parent. A number of reasons have been put forward as the basis for the growth in the use of captives:

- heavy and increasing premium costs in almost every line of insurance coverage.
- difficulties in obtaining cover certain types of risk.
- differences in coverage in various parts of the world.
- inflexible credit rating structures which reflect market trends rather than individual loss experience.
- insufficient credit for deductibles and/or loss control efforts.

Cash value

The **cash value** of an [insurance policy](#), also called the **cash surrender value** or **surrender value**, is the amount available to the policy holder in cash upon cancellation of the policy. This term is normally used with a [whole life policy](#) in which a portion of the [premiums](#) go toward an investment. The **cash value** is the value of this investment at any particular time. The holder of the policy may also be able to use the cash value of the policy as collateral on a loan.

Such cash value credited to an individual account during the tenure of the policy keeps growing with every payment of premium. It also increments due to interest credited. For the insurance company, the accumulated cash value acts as a reserve and may be used to set off adverse claims and to cover bonuses in profit sharing (also called "participating") policies. Cash values also act as 'security' to insurance companies when they issue loans to insurers.

Coinsurance

In the US insurance market, **coinsurance** is the joint assumption of risk between the **insurer** and the **insured**.

Coinsurance is expressed as a percentage or pair of percentages generally with the insurer's portion stated first. The maximum percentage the insured will be responsible for is generally no more than 50%. Coinsurance indicates how an insurer and an insured will share the costs of a bill that exceeds the **insurance policy's deductible** up to the policy's stop loss. Once the insured's out-of-pocket expenses equal the stop loss the insurer will assume responsibility for 100% of any additional costs.

In the international insurance market, **coinsurance** is the joint assumption of risk between various **insurers**.

Coinsurance is generally widely used in the European insurance market. In this context, a common insurance contract is used and the risk is shared based on percentages between the insurance companies. Often, one insurance company will lead. When leading the insurance company will be responsible for administering various aspects of the insurance policy, such as premium, any claims and the insurance documents. In this situation, a charge is levied (termed Lead Office commission).

Casualty insurance

Casualty insurance is a broad category of [insurance](#) that includes almost any coverage that is not related to [life](#), [health](#), or [property](#).

Segments

Therefore it includes many insurance coverages such as:

- business continuation insurance
- liability insurance
- political risk insurance
- terrorism insurance
- fidelity and surety bonds.

See also

- [Property insurance](#)

Contents insurance

Contents insurance is [insurance](#) that pays for damage to, or loss of, your personal possessions whilst they are located within your home. Some contents insurance policies also provide restricted cover for personal possessions temporarily taken away from the home by the policyholder.

In this context "possessions" means anything that is not permanently attached to the structure of your home. (Possessions that are permanently attached to the structure of the home can only be insured via home insurance.) Some contents policies may also include possessions kept in outbuildings or in the garden area attached to the house.

Contents insurance is usually sold alongside [home insurance](#) but it can also be purchased as a stand-alone policy, especially for those who are renting rather than owning their home.

See also

- [Homeowners insurance](#)

External links

- [Brokers Online](#) - FAQ - What does Contents Insurance cover?
- [Association of British Insurers](#) - Consumer Information – Home Buildings and Contents Insurance

Corporate-owned life insurance

Corporate-owned life insurance (COLI) is [life insurance](#) on employee's lives but owned by the corporation. COLI was originally only used for highly skilled workers or executives, and was purchased by a company to hedge against the valid financial risk of recruiting and training a replacement for key employees. This use is commonly known as Key man or Key person insurance. In the 1980s, as corporations realized the tax advantages of this arrangement, they began writing policies on masses of lower-level employees. When these employees die, the company benefits, and their families receive either a small portion of the proceeds or nothing. These policies can remain in place even after the employee quits or retires. This practice taking out [life insurance](#) policies on rank-and-file employees without their knowledge or consent, with the corporation making itself the beneficiary became known derisively as "Dead Peasants Insurance" or "janitor insurance".

Wal-Mart is among those companies under fire from the US Internal Revenue Service and labor organizations for the practice. The IRS considers COLI a tax dodge, and has pursued Dow Chemical, Camelot Music, Winn-Dixie and American Electric Power, among others, to recover tax underpayments.

The practice of using COLI is still widespread, and reportedly so is taking the coverage out on rank and file employees. According to one source, Hartford Life Insurance estimated that one-quarter of all Fortune 500 companies have COLI policies, which cover the lives of about 5 million employees. Wal-Mart alone has policies on 350,000 employees.

As of July 2005, Washington state joined five other American states in outlawing the practice if the employee is not informed. As of May 2005, legislation called the "COLI Best Practices Act of 2005" has been introduced in the US Congress to limit the policies to a certain class of employees, and to mandate the notification and consent of the covered employee.

External links

- [*US Rep Thomas Reynolds \(R-NY\)*](#) regarding the COLI Best Practices Act
- [*Leftcoaster blog*](#) Blog coverage regarding the Washington state legislation
- [*Does your boss want you dead?*](#) MSN Money, by Liz Pulliam Weston
- [*Wal-Mart Gambled, Lost \\$1.3B on 'Dead Peasant' Policies, Insurers Say*](#)

Credit insurance

Credit Insurance is an [insurance](#) policy associated with a specific loan or line of credit which pays back some or all of any monies owed should certain things happen to the borrower, such as death, disability, or unemployment.

The costs (called a "premium") for this are usually charged monthly, depending on the balance owed, and depending on the usage of the loan or line, could almost double the cost of it (on the opposite end of the spectrum, clever usage could avoid having to pay almost any premium at all).

The sale of credit insurance is controversial because it is almost always cheaper for an individual to forgo credit insurance, and instead have a term [life insurance](#) or disability insurance policy to cover the credit balance. The reason is that credit insurance is guaranteed issue, no matter if a person would otherwise be insurable or not. So the rates offered must reflect this, and be worse than if a healthy or other wise insurable person were to purchase coverage on their own.

In addition, there is an even more controversial practice (called single premium credit insurance), usually associated with the sub prime lending industry, of charging the premium only one time at the beginning of the loan. For example, charging 5,000 dollars at the time of a mortgage refinance, which is usually financed (added to the total loan amount) as part of the loan. This is considered very bad by critics, since doing this is only cheaper if one is sure that one is going to stay with the loan forever and not refinance. Critics contend most people do not realize this and lose money by refinancing once again, thereby losing the benefits of the credit insurance.

History

Credit Insurance was born at the end of nineteenth century, but it was mostly developed in Western Europe between the first and Second World Wars. Several companies were founded in every country, some of them also managed the political risk to export on behalf of their State.

Credit Insurance is a term used to describe both Trade Credit Insurance and Credit Life Insurance.

Credit Life Insurance is a consumer purchase, often sold with a big ticket purchase such as an automobile. The insurance will pay off the loan balance in the event of the death or the disability of the borrower. Although purchased by the consumer/borrower, the benefit payment goes to the company financing the purchase.

Trade Credit Insurance is purchased by corporations to insure their accounts receivable from loss due to the insolvency of the debtors.

Over the '90s, a concentration of the Trade Credit Insurance market took place and three big companies became the main players of a market focused on Western Europe:

- Euler Hermes, merger of the two credit insurance companies of the Allianz Group.
- Atradius. A merger between NCM and Gerling Kreditversicherung. Later renamed Atradius after it was demerged from the Gerling insurance group.
- Coface. Formerly a French government sponsored institution established in 1946, this company has now been privatised.

External links

- [Coface](#) official website
- [Atradius](#) official website
- [Euler Hermes](#) Official website

See also

- [Insurance](#)

Critical illness insurance

Critical illness insurance is an [insurance](#) that makes a lump sum cash payment if the policyholder is diagnosed with one of the critical illnesses listed on the [insurance policy](#) and survives a minimum number of days (the “survival period”) from the date the illness was first diagnosed.

The schedule of insured illnesses varies between insurance policies, so make sure you know what illnesses are covered.

The “survival period” also varies between insurance companies. 30 days and 28 days are the most common survival periods but some companies have adopted a 14 day survival period.

Insurance companies insist that the diagnosis of a qualifying critical illness must be made by a physician who specialises in that illness or condition.

The risks covered by Critical Illness Insurance are significant. For example: · In America, about 1.3 million new cancer cases are diagnosed each year, every 29 seconds someone suffers a coronary event and every 45 seconds someone suffers a stroke. (Sources: American Heart Association, Heart and Stroke Statistical Update 2003; and American Cancer Society, Cancer Facts and Figures 2003.) · In Canada, more people will experience a critical illness before they reach 75, than will die before that age. (Source: Munich Re, 2000) · In the United Kingdom, 1 in 5 men and 1 in 6 women will experience a critical illness before their normal retirement age. (Source: Munich Re, 2003)

Though relatively new to the North American marketplace, critical illness insurance is growing in popularity.

In the UK, Critical Illness Insurance is a well established form of insurance and is frequently purchased in conjunction with a [life insurance](#) policy. The sale of all insurance in the UK is regulated by the Financial Services Authority.

See also

- [Health insurance](#)

External links

- Mutual of Omaha [\[1\]](#)- More information for US Residents
- TD Canada Trust [\[2\]](#)- More information for Canadian Residents
- Association of British Insurers [\[3\]](#) - More Information for uk residents

Crop insurance

Crop insurance is purchased by farmers to protect themselves against crop failures due to natural disasters, such as floods, hail, and drought. Crop insurance may be subsidized by the government.

D

Death spiral | Deductible | Directors and officers liability insurance

Death spiral

Death spiral is a term used to describe an [insurance](#) plan whose costs are rapidly increasing as a result of changes in the covered population. It is the result of adverse selection in insurance policies where lower risk policy holders choose to change policies or be uninsured.

External links

- [Death Spiral or Euthanasia? The Demise of Generous Group Health Insurance Coverage](#)

Deductible

In an [insurance](#) policy, the **deductible** or **excess** is the portion of any claim that is not covered by the insurance provider. It is normally quoted as a fixed amount and is a part of most policies covering losses to the policy holder. The deductible must be "met", that is, paid by the insured, before the benefits of the policy can apply.

In a typical [automobile insurance](#) policy, a deductible will apply to claims arising from damage to or loss of the policy holder's own vehicle, whether this damage/loss is caused by accidents for which the holder is responsible, vandalism or theft. Third-party liability coverage generally has no deductible, since the third party will likely attempt to recover any loss, however small, for which the policy holder is liable.

Most [health insurance](#) policies and some [travel insurance](#) policies have deductibles as well. Typically, a general rule is: the higher the deductible, the lower the [premium](#), and vice versa. The type of health insurance deductibles can also vary, as individual amounts and family amounts. Major medical insurance policies are known for often having a deductible which does not cover the cost of routine visits (e.g., to a doctor's office).

Directors and officers liability insurance

Directors and Officers Liability Insurance is insurance payable to the directors and officers a company if they get sued for something that happened while they were with that company.

Typical sources of claims include shareholders, shareholder-derivative actions, customers, regulators, competitors (for anti-trust or unfair trade practice allegations).

Directors and Officers Liability insurance is commonly referred to as **D&O** in the insurance industry.

Directors and Officers Liability insurance is commonly purchased with a companion product "Corporate Reimbursement insurance", also known as "Company Reimbursement insurance". When purchased together, a single insurance policy is normally issued which is entitled "Directors and Officers Liability and Company Reimbursement insurance".

D&O insurance is often purchased by the company itself, even when it is for the sole benefit of directors and officers. Reasons for doing so are many, but commonly would assist a company in attracting and retaining directors. Where a country's legislation prevents the company from purchasing the insurance, a premium split between the directors and the company is often done, so as to demonstrate that the directors have paid a portion of the premium.

E

[Earthquake insurance](#) | [Endowment mortgage](#) | [Endowment policy](#)
| [Euro-Center](#) | [Experience modifier](#) | [Extended coverage](#)

Earthquake insurance

Earthquake insurance is a form of property [insurance](#) that pays the policyholder in the event of an earthquake that causes damage to the property. Most ordinary [homeowners insurance](#) policies do not cover earthquake damage.

Most earthquake insurance policies feature a high [deductible](#), which makes this type of insurance useful if the entire home is destroyed, but not useful if the home is merely damaged. Rates depend on location and the probability of an earthquake. Rates may be cheaper for homes made of wood, which withstand earthquakes better than homes made of brick.

As with flood insurance or insurance on damage from a hurricane or other large-scale disasters, insurance companies must be careful when assigning this type of insurance, because an earthquake strong enough to destroy one home will probably destroy dozens of homes in the same area. If one company has written insurance policies on a large number of homes in a particular city, then a devastating earthquake will quickly drain all the company's resources. Insurance companies devote much study and effort toward risk management to avoid such cases.

California

Earthquake insurance has become a political issue in California, whose residents purchase more earthquake insurance than residents of any other state in the U.S. After the 1994 Northridge earthquake, nearly all insurance companies completely stopped writing homeowners' insurance policies altogether in the state, because under California law (the "mandatory offer law"), companies offering homeowners' insurance must also offer earthquake insurance. Eventually the legislature created a "mini policy" that could be sold by any insurer to comply with the mandatory offer law: only structural damage need be covered, with a 15% deductible. Claims on personal property losses and "loss of use" are limited. The legislature also created a quasi-public (privately funded, publicly managed) agency called the CEA California Earthquake Authority. Membership in the CEA by insurers is voluntary and member companies satisfy the mandatory offer law by selling the CEA mini policy. Premiums are paid to the insurer, and then pooled in the CEA to cover claims from homeowners with a CEA policy from member insurers. The state of California specifically states that it does not back up CEA earthquake

insurance, in the event that claims from a major earthquake were to drain all CEA funds, nor will it cover claims from non-CEA insurers if they were to become insolvent due to earthquake losses. [1]

Japan

The government of Japan created the "Japanese Earthquake Reinsurance" scheme in 1966, and the scheme has been revised several times since. Homeowners may buy earthquake insurance from an insurance company, usually as an optional rider to a [fire insurance](#) policy. Insurers enrolled in the JER scheme who have to pay earthquake claims to homeowners share the risk among themselves and also the government, through the JER. The government pays a much larger proportion of the claims if a single earthquake causes aggregate damage of over about 1 trillion yen (about US \$8.75 billion). The maximum payout in a single year to all JER insurance claim filers is 4.5 trillion yen (about US \$39.4 billion); if claims exceed this amount, then the claims are pro-rated among all claimants.

Endowment mortgage

An **endowment mortgage** is a mortgage arranged on an interest-only basis where the capital is intended to be repaid by one or more [endowment policies](#). The phrase **endowment mortgage** is used mainly in the United Kingdom by lenders and consumers to refer to this arrangement and is not a legal term.

The borrower has two separate agreements. One with the **lender** for the **mortgage** and one with the **insurer** for the **endowment policy**. The arrangements are distinct and the borrower can change either arrangement if they wish. In the past the endowment policy was often taken as additional security by lender. That is, the lender applied a legal device to ensure the proceeds of the endowment were made payable to them rather than the borrower; typically the policy is assigned to the lender. This practice is uncommon now.

Why have an endowment mortgage

The customer pays only the interest on the capital borrowed, thus saving money with respect to an ordinary repayment loan; the borrower instead makes payments to an endowment policy. The objective is that the investment made through the endowment policy will be sufficient to repay the mortgage at the end of the term and possibly create a cash surplus.

Up to 1984 qualifying insurance contracts (including endowment policies) received tax relief on the premiums known as LAPR (Life Assurance Premium Relief). This gave a tax advantage for endowment mortgages over repayment. Similarly MIRAS (Mortgage Interest Relief At Source) made having a larger mortgage advantageous as the MIRAS relief reduced as a repayment mortgage was repaid. This tax incentivisation toward endowment mortgages is not often commented on in the media when they discuss endowment mortgages.

Problems with endowment mortgages

The underlying premise with endowment policies being used to repay a mortgage, is that the rate of growth of the investment will exceed the rate of interest charged on the loan. Towards the end of the 1980s when endowment mortgage selling was at its peak, the anticipated growth rate for endowments policies was high (7-12% per annum). By the middle of the 1990s the change in the economy towards lower inflation made the assumptions of a few years ago look optimistic.

Regulation of investment advice in the 1994 and a growing awareness of the potential for regulatory action against the insurers lead to reduction in anticipated growth rates down to 7.5% and eventually as low as 4% per annum. By 2001 the sale of endowments to repay a mortgage was virtually seen as taboo.

Shortfalls

Financial regulations introduced compulsory *reprojection letters* to show existing endowment holders what the likely maturity value of their endowment would be assuming standard growth rates.

This in turn lead to a dramatic rise in complaints of mis-selling and spawned a secondary industry that 'handles' complaints for consumers for a fee, even though they can pursue it themselves for free.

In many cases insurers have found in favour of the policyholder and have been required to restore their customers to the financial position they would have been in had they taken out a repayment mortgage instead.

Endowment Resources

Mortgage

Related

- [Information from the Financial Ombudsman Service](#)
- [FSA Endowment Mortgage Complaints](#)

Endowment policy

An **endowment policy** is a [life assurance](#) contract designed to pay a lump sum after a specified term.

Policies are typically [with-profits](#) or unit-linked.

Full endowments

A full endowment is a with-profits endowment where the basic sum assured is equal to the death benefit at start of policy.

Low cost endowment (LCE)

A low cost endowment is an [with-profits](#) endowment policy with reduced basic sum assured (typically $\frac{1}{3}$ of the target amount) with an element of life assurance. The idea is that the life assurance element and basic sum assured repay the target amount on death.

These plans were originally designed to act as a mortgage repayment vehicle.

Unit-linked endowment

The premium is invested in units of a unitised insurance fund. Units are encashed to cover the cost of the life assurance.

Modified Endowments (U.S.)

These were created in the [Technical Corrections Act of 1988](#) (H.R. 4333, S. 2238) in response to single-premium life (endowments) being used as tax shelters . They are contracts with fewer than 7-level annual premiums, and are subject to more stringent tax regulations (tax code 7702, 7702A). They are also subject to IRA-like annuity rules (such as penalties for pre-death proceeds before age 59½). If a life insurance policy is changed and then fits the seven-pay rules, it may then be redefined as a modified endowment.

See also

- [Life assurance](#)
- Investment
- [With-profits policy](#)
- [Unitised insurance funds](#)

Euro-Center

Euro-Centers are local insurance service offices that assist insurance policy holders in case of accidents or emergencies. The name 'Euro-Center' originated some 30 years ago, when the first local Service Centre was established on Majorca. Though carrying the 'Euro' family name, Euro-Centers are located worldwide and covering six continents:

Europe: Spain (Mallorca, Costa del Sol) Cyprus (Larnaca) Turkey (Istanbul) Switzerland (St. Gallen)

Australia: Australia (Sydney) New Zealand (Satellite Office)

South America: Brazil (Rio de Janeiro)

North America: USA (New York)

Africa: South Africa (Cape Town)

Asia: Thailand (Bangkok) China (Beijing) Nepal (Satellite Office)
Bali (Satellite office)

The international network is designed to provide "assistance on the spot" to insurance policyholders "during" their travels - where and when assistance is needed. In this way, a substantial part of the claims handling has been moved closer to the policyholder. The collaboration between the assistance companies and the Euro-Centers is an essential element in the international travel insurance network.

Experience modifier

Experience modifier or **experience modification** is a term used in the american [insurance](#) business and more specifically in workers' compensation insurance. It is the adjustment of manual rating based on previous loss experience. Usually three years of loss experience are used to determine the experience modifier for a workers' compensation policy.

Extended coverage

Extended coverage is a term used in the [insurance](#) business. All basic insurance policies have exclusions - specific loss causalities that are not covered by the [insurance company](#). An Extended coverage (EC) policy covers these exclusions.

See also

- [Insurable risk](#)

F

False insurance claims | Fidelity bond | Financial reinsurance |
Fire insurance marks

False insurance claims

Insurance fraud or **false insurance claims** are [insurance](#) claims filed with the intent to defraud an insurance provider.

In the United States insurance fraud is estimated to cost US\$875 per person per year with The Coalition Against Insurance Fraud estimating the loss to be \$80 billion per year and Medicare estimating fraud in its system costs the government \$179 billion per year.

Insurance fraud hurts the average person in two ways. First, all fraud costs, including losses, investigations, etc., are paid for by the insured through higher premiums, or, in the case of government insurance like Medicare, in higher taxes. Second, if a particular individual is the target for the fraud, they have costs such as deductible payments, loss of property use, etc., as well as higher premiums from the claim loss and the potential for denial of future coverage.

Some memorable examples of insurance fraud include the following:

- Former British Government minister John Stonehouse went missing in 1974 from a beach in Miami. He was discovered living under an assumed name in Australia.
- Derek Nicholson and Nikole Nagle were accused of attempting to defraud a [life insurance](#) company for \$1 million after Mr Nicholson apparently went missing in New Jersey in July 2003 and Ms Nagle reported him missing and made a claim on the policy.
- Gaylan Sweet of San Diego, California, who was a claims adjuster for Allstate Insurance set up a scheme in 2002 that included non-existent children who were killed in hit-and-run auto accidents at non-existent intersections by phantom drunk drivers. Sweet and two others (who posed as the parents of the non-existent children) pocketed \$710,000 before being caught by Allstate.

External links

- [BBC article](#)
- <http://www.insurancefraud.org>
- <http://www.insurancejournal.com/news/west/2002/12/20/25075.htm>

Fidelity bond

A **fidelity bond** is a form of protection that covers policyholders for losses that they incur as a result of fraudulent acts by specified individuals. It usually insures a business for losses caused by the dishonest acts of its employees.

While called bonds, these obligations to protect an employer from employee-dishonesty losses are really insurance policies. These insurance policies protect from losses of company monies, securities, and other property from employees who have a manifest intent to cause the company loss. There are also many other forms of crime-insurance policies (burglary, fire, general theft, computer theft, disappearance, fraud, forgery, etc.) to protect company assets.

Financial reinsurance

Financial reinsurance, also known as 'fin re', is a form of [reinsurance](#) which is focused more on capital management than on risk transfer.

One of the particular difficulties of running an insurance company is that its financial results - and hence its profitability - tend to be uneven from one year to the next. Since insurance companies want, above all else, to produce consistent results, they are always attracted to ways of hoarding this year's profit to pay for next year's possible losses. Financial reinsurance is one means by which insurance companies can "smooth" their results.

A pure 'fin re' contract tends to cover a multi-year period, during which the premium is held and invested by the reinsurer. It is returned to the ceding company - minus a pre-determined profit-margin for the reinsurer - either when the period has elapsed, or when the ceding company suffers a loss. 'Fin re' therefore differs from conventional reinsurance because most of the premium is returned whether there is a loss or not: little or no risk-transfer has taken place.

History

'Fin re' has been around since at least the 1960s, when Lloyd's syndicates started sending money overseas as reinsurance premium for what were then called 'roll-overs' - multi-year contracts with specially-established vehicles in tax-light jurisdictions such as the Cayman Islands. These deals were legal and approved by the UK tax-authorities. However they fell into disrepute after some years, partly because their tax-avoiding motivation became obvious, and partly because of a few cases where the overseas funds were siphoned-off or simply stolen.

More recently, the high-profile bankruptcy of the HIH group of insurance companies in Australia revealed that highly questionable transactions had been propping-up the balance-sheet for some years prior to failure. To be clear, although *fin re* contracts were involved, it was the **fraudulent accounting** for those contracts - and **not** the actual use of *fin re* - which was the problem. As of June 2006, General Re and others are being sued by the HIH liquidator in connection with the fraudulent practices.

The regulator's perspective

When looking at the financial position of a [Life insurer](#), the company's assets and liabilities are measured. The difference is called the 'free assets' of the company. The greater the free assets relative to the liabilities, the more 'solvent' the company is deemed to be.

There are different ways of measuring assets and liabilities - it depends on who is looking. The regulator, who is interested in ensuring that insurance companies remain solvent so that they can meet their liabilities to policyholders, tends to under-estimate assets and over-estimate liabilities.

In taking this conservative perspective, one of the steps taken is to effectively ignore future profits. On the one hand this makes sense - it's not prudent to anticipate future profits. On the other hand, for an entire portfolio of policies, although some may lapse - statistically we can rely on a number to still be around to contribute to the company's future profits.

Future profits can thus be seen to be an inadmissible asset - an asset which may not (from the regulator's point of view, anyway) be taken into account.

A banker's perspective

If a bank were to give the insurer a loan, the insurer's assets would increase by the amount of the loan, but their liabilities would increase by the same amount too - because they owe that money back to the bank.

With both assets and liabilities increasing by the same amount, the free assets remain unchanged. This is generally a sensible thing, but it's not what financial reinsurance is aiming for.

The reinsurer's perspective

In setting up a financial reinsurance treaty, the reinsurer will provide capital (there are a number of ways of doing this, discussed below). In return, the insurer will pay the capital back over time. The key here is to ensure that repayments only come out of surplus emerging from the reinsured block of business. The benefit of this surplus-limitation comes from the fact that in the regulatory accounts there is no value ascribed to future profits - which means the liability to repay the reinsurer is made from a series of payments which are deemed to be zero.

The impact is that there is an increase in assets (from the financing), but no increase in liabilities. In other words, financial reinsurance increases the company's free assets.

Different accounting regimes

It's important to be clear that financial reinsurance has an impact on the regulatory balance sheet only - which itself already provides a distorted view of a company's solvency. Financial reinsurance, certainly for life insurers, has no impact on their GAAP accounts. It does not distort a company's shareholder-reported profits.

A lot of the bad press around financial reinsurance is because of inappropriate designs and incorrect accounting for the transaction. It is not a problem of financial reinsurance itself.

Fire insurance marks

Fire insurance marks were lead or copper plaques embossed with the sign of the insurance company, and placed on the front of the insured building as a guide to the insurance company's fire brigade. They are common in the older areas of Britain's and America's cities and larger towns. They were used on the eighteenth and nineteenth century in the days before municipal fire services were formed.

Online references

- [The Addis Collection](#)

Reference

- G. V. Blackstone, *A history of the British Fire Service*, 1957. pp 68 and plate 7

G

[General insurance](#) | [Gross premiums written](#) | [Group Insurance](#)

General insurance

General insurance policies, including automobile and homeowners policies, provide payments depending on the loss from a particular financial event. **General insurance** typically comprises any insurance that is not determined to be **life insurance**, and is called **property** and **casualty** insurance in the U.S..

In the UK, **General insurance** is broadly divided into three areas; personal lines, commercial lines and London market.

The *London market* insures large commercial risks, for example insuring supermarkets, football players and other very specific risks.

Commercial lines products are usually designed for relatively small legal entities. These would include workers comp (employers liability), public liability, product liability, commercial fleet and other general insurance products sold in a relatively standard fashion to many organisations.

Personal lines products are designed to be sold in large quantities. This would include **autos** (private car), **homeowners** (household), pet insurance, creditor insurance and others.

Gross premiums written

When a non-life [insurance](#) company closes a contract to provide [insurance](#) against loss, the revenues (premiums) expected to be received over the life of the contract are called **gross premiums written**. Insurance companies often purchase [reinsurance](#) to protect themselves against the risk of a loss above a certain threshold; the cost of reinsurance (reinsurance premiums) is deducted from gross premiums written to arrive at *net premiums written*.

Under accrual-basis accounting, only premiums pertaining to the relevant accounting period are recognized as revenues. These premiums are called *net premiums earned*.

See Also

- [Net premium valuation](#)

Group Insurance

Group insurance is [insurance](#) that covers a group of people with common characteristics, usually that they are members of societies, employees of a common employer, or professionals in a common group.

Group insurance may or may not be converted to individual coverage. Because individuals who are more likely to need it are more likely to sign up for it, it suffers from adverse selection, and is usually more expensive than individual policies for a lower risk person.

H

[Health insurance](#) | [Health insurance fraud](#) | [Home insurance](#) |
[Hospital case management](#) | [Hospital peer review](#)

Health insurance

Health insurance is a type of [insurance](#) whereby the insurer pays the medical costs of the insured if the insured becomes sick due to covered causes, or due to accidents. The insurer may be a private organization or a government agency. Market-based health care systems such as that in the United States rely primarily on private health insurance.

History and evolution

The concept of health insurance was proposed in 1694 by Hugh the Elder Chamberlen from the Peter Chamberlen family. In the late 19th century, early health insurance was actually *disability* insurance, in the sense that it covered only the cost of emergency care for injuries that could lead to a disability. This payment model continued until the start of the 21st century in some jurisdictions (like California), where all laws regulating health insurance actually referred to disability insurance.^[1] Patients were expected to pay all other health care costs out of their own pockets, under what is known as the fee-for-service business model. During the middle to late 20th century, traditional disability insurance evolved into modern health insurance programs. Today, most comprehensive private health insurance programs cover the cost of routine, preventive, and emergency health care procedures, and also most prescription drugs, but this was not always the case.

Today, issues involving health insurance are very controversial and subject to much political debate as many perceive a conflict between the needs of insurance companies to remain solvent versus the needs of their customers to remain healthy.

Private health insurance

The largest difference between private sector health insurance and life insurance is that for life insurance, a person may purchase guaranteed renewable insurance for the whole of the insured's life at a constant premium rate, while health insurance is generally purchased year by year with generally no assurance of renewability and if renewable no guarantee that premium rates will not increase.

Before buying health insurance, a person typically fills out a comprehensive medical history form that asks whether the person smokes, how much the person weighs, and has the person ever been treated for any of a long list of diseases. Applicants can get discounts if they do not smoke and live a healthy lifestyle, which might encourage some people to quit smoking or make other improvements in their lifestyle. The medical history is also used to screen out persons with pre-existing medical conditions.

A health insurance policy is a legal, binding contract between the insurance company and the customer. Many insurance companies purchase re-insurance to protect themselves from a catastrophic loss due to an unforeseen event.

Critics of private health insurance claim that this conflict of interest between the needs of insurance companies to remain solvent versus the needs of their customers to remain healthy is why state and federal regulation of health insurance companies is necessary. Some say that this conflict exists in a liberal healthcare system because of the unpredictability of how patients respond to medical treatment, but proponents of regulation argue that too many health insurance companies put their desire for profits above the welfare of the consumer or patient.

The following is a hypothetical example of a situation that might confront an insurance company: Suppose that a large number of customers of a particular insurance company contracted a rare disease and the hospital charged 10 million dollars a patient to treat them. The insurance company would then be faced with a choice of paying all claims without complaint (thus losing money and possibly going out of business) or denying the claims (thus outraging patients and their families, discouraging potential customers, and becoming a target for lawsuits and legislation).

Health insurance companies and consumer advocates agree that private health insurance faces unique problems. Health insurance companies use the term "adverse selection" to describe the tendency for sick people to be more likely to sign up for health insurance.

Insurance companies say that asymmetry of information about a person's health and behavior is likely to lead to adverse selection and (ex-ante) moral hazard. Health insurance companies say, that in essence, those seeking health insurance are likely to be those with existing medical problems or those who are likely to have future medical problems, and that those who take out insurance may engage in risky behavior, such as smoking and excessive alcohol consumption, which an otherwise sane person would not do. Insurance companies say that the cost of providing health insurance to these bad risks raises the cost of insurance to the 'good' insurance risks, possibly pricing them out of the market, and could create a situation in a market where insurance was uneconomical for private insurance companies to provide.

Both public and private health insurance will also suffer from ex-post moral hazard. This phenomena is in essence the consequence of reduced prices for medical care. Since most insurance plans, whether public or private, reduce the out-of pocket cost of medical care, the behavior of individuals will be affected by those reduced prices. In the same way that people treat water with little care when it is very inexpensive, people will also tend to over-use medical care when the out-of pocket costs are small. Of course, medical care still needs to be financed, and so taxes or premiums will be higher than the optimal amount. This inflation of taxes or premiums to cover the choices made under subsidized prices is what is termed ex-post moral hazard, and is a different phenomena than the ex-ante moral hazard mentioned above.

Critics of private health insurance state that those who are sick should be able to get health insurance because they need it the most and that if everyone had health insurance, adverse selection would not be a problem.

With publicly funded health insurance the good and the bad risks all receive coverage without regard to their health status, which eliminates the problem of adverse selection, although it introduces a problem of moral hazard.

Insurance companies explain the economics of insurance by saying that, in general, if many sick people buy health insurance from a private health insurance company, but few healthy people buy it, the price of the insurance rises. (Critics of private health insurance point out that few sick people are allowed to buy health insurance). Insurance companies also say that if more healthy people buy health insurance, but few sick people buy it, the price drops. In other words, the price drops if more money goes in and less is paid out.

Because of advances in medicine and medical technology, medical treatment is more expensive, and people in developed countries are

living longer. The population of those countries is aging, and a larger group of senior citizens requires more medical care than a young healthier population. (A similar rise in costs is evident in Social Security in the United States.) These factors cause an increase in the price of health insurance.

Some other factors that cause an increase in health insurance prices are health related: insufficient exercise; unhealthy food choices; a shortage of doctors in impoverished or rural areas; excessive alcohol use, smoking, street drugs, obesity, among some parts of the population; and the modern sedentary lifestyle of the middle classes.

In theory, people could lower health insurance prices by doing the opposite of the above; that is, by exercising, eating healthy food, avoiding addictive substances, etc. Healthier lifestyles protect the body from some, although not all, diseases, and with fewer diseases, the expenses borne by insurance companies would likely drop.

Under these circumstances, the consumer would hope to benefit from the savings; however, critics of private health insurance claim that too much of the insurance premiums are paid out in executive salaries or retained as profits by the company.

Future challenges

With the advent of DNA testing, previously unknown risk factors involving genetic makeup will become known and this is expected to lead to greater pressure on the private health insurance industry as they try to limit their exposure to high-risk individuals. As larger groups of these individuals are identified and charged higher premiums (if they can get coverage at all) the pressure on privacy laws to limit the flow of personal medical data will only increase.

Common complaints of private insurance

Some common complaints about private health insurance include:

1. Insurance companies do not announce their health insurance premiums more than a year in advance. This means that, if one becomes ill, he or she may find that their premiums have greatly increased. This largely defeats the purpose of having insurance in the eyes of many. BUPA does not penalise individuals who claim but spreads the cost across the customer base.
2. If insurance companies try to charge different people different amounts based on their own personal health, people will feel

they are unfairly treated. Some states require that insurance companies cover all who apply at the same cost, or that rates vary only by age of the insured; this rule has the effect that healthy people subsidize sick ones, and thus frequently only those in poor health buy insurance, making the premiums very expensive.

3. When a claim is made, particularly for a sizeable amount, it may be deemed in the best interest of the insurance company to use paperwork and bureaucracy to attempt to avoid payment of the claim or, at a minimum, greatly delay it. Some percentage of insureds will simply give up, leading to lower costs for the insurance company.
4. Health insurance is often only widely available at a reasonable cost through an employer-sponsored group plan. This means that unemployed individuals and self-employed individuals are at a disadvantage.
5. Employers can write some or all of their employee health insurance premiums off of their taxable income whereas traditionally individuals have had to pay taxes on income used to fund health insurance. This reduces the employee's bargaining power in negotiating service with the insurance provider and also increases their dependence on the employer. In the U.S., COBRA and more recent legislation has been passed in an attempt to address the latter concern, and full tax deductibility for health insurance premiums paid by the self-employed has recently been passed by Congress as well.
6. Experimental treatments are generally not covered. This practice is especially criticized by those who have already tried, and not benefited from, all "standard" medical treatments for their condition. It also leads to many insurers claiming or attempting to claim that procedures are still "experimental" well after they have become standard medical practice in many instances. (This phenomenon was especially seen after organ transplants, particularly kidney transplants, first became standard medical practice, due to the tremendous costs associated with this procedure and other organ transplantation.)
7. The Health Maintenance Organization (HMO) type of health insurance plan has been criticized for excessive cost-cutting policies. The least justifiable of these efforts, according to critics, is having accountants or other administrators essentially making medical decisions for customers by deciding which types of medical treatment will be covered and which will not.
8. As the health care recipient is not directly involved in payment of health care services and products, they are less likely to

scrutinize or negotiate the costs of the health care received. To care providers, insured care recipients are essentially seen as customers with relatively limitless financial resources who don't look at prices. The health care company has few popular and many unpopular ways of controlling this market force. In response to this, many insurers have implemented a program of bill review in which insureds are allowed to challenge items on a bill (particularly an inpatient hospital bill) as being for goods or services not received; if this is proven to be the case, the insured is awarded with a percentage of the amount that the insurer would have otherwise paid for this disputed item or items, usually 25% or occasionally even 50%, with a ceiling so that the insured will not truly become wealthy from this procedure.

9. Some health care providers end up with different sets of rates for the same procedure. One for people with insurance and another for those without. Also, health insurance reimbursements are based on the *reasonable and customary* (R&C) charge for a service. but many insurers will not reveal what the R&C charge for a service is until after the service is performed.

Publicly funded health insurance

Medicare

In the United States, government-funded Medicare programs help to insure the elderly and end stage renal disease patients. Some health care economists (Ewe Reinhardt of Princeton and Stuart Butler among others) assert that (the third party payment feature) these programs have had the unintended consequence of distorting the price of medical procedures. As a result, HCFA (the Health Care Financing Administration) has set up a list of procedures and corresponding prices under the Resource-Based Relative Value Scale (RBRVS).

Starting in 2006, Medicare Part D provides a program for the elderly to buy insurance for the purchase of prescription drugs. Critics have complained that the list prices of some drugs have increased dramatically in response to the increased funding that the net after insurance cost of many drugs have not decreased markedly. But for the purpose of insurance, if the risk of catastrophic high costs is truly shifted to the insurer, then the program can be said to be legitimate insurance. Time will tell if critics are right as the program is brand new.

Medicaid

While Medicaid was instituted for the very poor, beginning in 1972, the number of individuals in the United States who lacked any form of health insurance for any period during the year increased each year, every year with the exceptions of the years 1999 and 2000. The reductions in the number of uninsured individuals during those years was due entirely to the expansion of medical assistance under the auspices of the State Children's Health Insurance Program (SCHIP).

Common complaints of publicly funded medicine

1. Price no longer influences the allocation of resources, thus removing a natural self-corrective mechanism for avoiding waste and inefficiency.
2. Health care workers' pay is often not related to quality or speed of care. Thus very long waits can occur before care is received.
3. Because publicly funded medicine is a form of socialism, many of the general concerns about socialism can be applied to this

discussion.

4. People are afraid that they cannot choose their own doctor. The state chooses for them.
5. Countries which have publicly funded medicine don't do as much medical research and development as there is very low payoff to developing new drugs and medical techniques.
6. By limiting the amount of money in the health care system through political mechanisms, shortages of health care resources (such as physicians, nurses, medical equipment, medical devices, pharmaceuticals, and hospitals) are more likely to occur.

Health insurance in the United States

According to the latest United States Census Bureau figures, approximately 85% of Americans have health insurance. Approximately 60% obtain health insurance through their place of employment or as individuals, and various government agencies provide health insurance to 25% of Americans.

The shift to managed care in the U.S.

Through the 1990s, managed care grew from about 25% of U.S. employees to the vast majority.

Rise of managed care in the U.S.				
Year	conventional plans	HMOs	PPOs	POS plans
1988	73%	16%	11%	NA
1993	46%	21%	26%	7%
1996	27%	31%	28%	14%
1998	14%	27%	35%	24%
1999	9%	28%	38%	25%
2000	8%	29%	41%	22%
2001	7%	23%	48%	22%

Fewer U.S. employers offering retiree health benefits

According to 2000 U.S. census data [2], the percentage of large firms (200 employees or more) offering health benefits to its retirees fell between 1988 and 2001 (excepting a spike in 1995).

- 1988: 66%
- 1991: 46%
- 1993: 36%

- **1995:** 40%
- **2000:** 37%
- **2001:** 34%

Disparity in the rates of uninsured between U.S. states

According to 2000 U.S. census data [\[3\]](#), people living in the western and southern U.S. states are more likely to be uninsured.

- **High (19%+) rate of uninsured:** Alaska, Arizona, California, Florida, Idaho, Louisiana, Montana, New Mexico, Oklahoma, Texas, West Virginia
- **Medium (14%-18.9%) rate of uninsured:** Alabama, Arkansas, Colorado, Georgia, Illinois, Kentucky, Mississippi, New York, North Carolina, South Carolina, Virginia
- **Low (7%-13.9%) rate of uninsured:** all other states. Wisconsin and Rhode Island were tied for the lowest rates of individuals who lacked insurance at any point during the year (4% each).

Health insurance in Massachusetts

In 2006 Massachusetts signed into law legislation that requires all people to self-insure if they are not otherwise covered by an employer or other plan. Proponents of the legislation herald a solution to high levels of uninsured. Critics say people simply cannot afford it and this will take even more of their discretionary spending away.

References

1. ^ See California Insurance Code Section 106 (defining disability insurance).[\[1\]](#) In 2001, the California Legislature added subdivision (b), which defines "health insurance" as "an individual or group disability insurance policy that provides coverage for hospital, medical, or surgical benefits."

External links

- [Health insurance data from the US census](#)
- [History of Health Insurance in the United States](#)
- [Health Insurance and the acceptance of Alternative Medicine](#)
- [Maryland Health Insurance Resource](#)
- [Public's expectation from Health Insurance](#)

Health insurance fraud

Health insurance fraud is described as an intentional act of deceiving, concealing, or misrepresenting information that results in health care benefits being paid to an individual or group.

Studies show that over *30 billion dollars* is lost each year to health care fraud in the United States. In order to control costs, [insurance](#) companies have found it necessary to investigate fraud for the benefits of the members.

Fraud can be committed by both a member and a provider. **Member fraud** consists of ineligible members and/or dependents, alterations on enrollment forms, concealing pre-existing conditions, failure to report other coverage, prescription drug fraud, and failure to disclose claims that were a result of a work related injury. **Provider fraud** consists of claims submitted by bogus physicians, billing for services not rendered, billing for higher level of services, diagnosis or treatments that are outside the scope of practice, alterations on claims submissions, and providing services while under suspension or when license have been revoked.

In response to the increased amount of health care fraud in the United States, Congress, through the Health Insurance Portability & Accountability Act of 1996 (HIPAA), have specifically established health care fraud as a federal criminal offense with punishment of up to 10 years of prison in addition to significant financial penalties.

Source

- <http://www.nhcaa.org>

Home insurance

Home insurance, or **homeowners insurance**, is an [insurance](#) policy that combines various personal insurance protections which can include losses occurring to one's home, its contents, loss of its use (additional living expenses), loss of other personal possessions of the homeowner, as well as liability insurance for accidents that may happen at the home.

The cost of homeowners insurance often depends on what it would cost to replace the house and which additional riders—additional items to be insured—are attached to the policy. The insurance policy itself is a lengthy contract, and names what will and what will not be paid in the case of various events. Typically, claims due to earthquakes, floods, "Acts of God", or war (whose definition typically includes a nuclear explosion from any source) are excluded. Special insurance can be purchased for these possibilities, including flood insurance and [earthquake insurance](#).

The home insurance policy is usually a term contract—a contract that is in effect for a fixed period of time. The payment the insured makes to the insurer is called the premium. The insured must pay the insurer the premium each term. Most insurers charge a lower premium if it appears less likely the home will be damaged or destroyed: for example, if the house is situated next to a fire station, or if the house is equipped with fire sprinklers and fire alarms. [Perpetual insurance](#), which is type of home insurance without a fixed term, can also be obtained in certain areas.

In the United States, most home buyers borrow money in the form of a mortgage, and the mortgage lender always requires that the buyer purchase homeowners insurance as a condition of the loan, in order to protect the bank if the home were to be destroyed. Anyone with an insurable interest in the property should be listed on the policy.

Types of Homeowners Insurance

United States

As described in Wiening et. al. [1], prior to the 1950's, there were separate policies for the various perils that could affect a home. A homeowner would have had to purchase separate policies covering fire losses, theft, personal property, and the like. During the 1950s, policy forms were developed, allowing the homeowner to purchase all the insurance they needed on one complete policy. However, these policies varied by insurance company, and were difficult to comprehend. The need for standardization grew so great that a private company based in Jersey City, New Jersey, Insurance Services Office, also known as the ISO, was formed in 1971 to provide risk information and issued a simplified homeowners policy for resell to insurance companies. These policies have been amended over the years until currently, the ISO has six standardized homeowners insurance forms in general and consistent use . Of these HO-3 is the most common policy followed by HO-4 and HO-6. Others that are less used, though still significant, are HO-1, HO-2 and HO-5. Each is summarized below:

HO-1

A limited policy that offers varying degrees of coverage but only for items specifically outlined in the policy. These might be used to cover a valuable object found in the home, such as a painting.

HO-2

Similar to HO-1, HO-2 is a limited policy in that it covers specific portions of a house against damage. The coverage is usually a "named perils" policy, which lists the events that would be covered. As above, these factors must be spelled out in the policy.

HO-3

This policy is the most common written for a homeowner and is designed to cover all aspects of the home, structure and it contents as well as any liability that may arise from daily use as well as any visitors who may encounter accident or injury on the premises. Covered aspects as well as limits of liability must be clearly spelled out in the policy to insure proper coverage. The coverage is usually called "all risk". Also called an "open perils" policy.

HO-4

This is commonly referred to as renters insurance or renter's coverage. Similar to HO-6, this policy covers those aspects of the apartment and its contents not specifically covered in the blanket policy written for the complex. This policy can also cover liabilities arising from accidents and intentional injuries for guests as well as passers-by up to 150' of the domicile. Common coverage areas are events such as lightning, riot, aircraft, explosion, vandalism, smoke, theft, windstorm or hail, falling objects, volcanic eruption, snow, sleet, and weight of ice.^[2]

HO-5

This policy, similar to HO-3, covers a home (not a condo or apartment), the homeowner and its possessions as well as any liability that might arise from visitors or passers-by. This coverage is differentiated in that it covers a wider breadth and depth of incidents and losses than an HO-3.

HO-6

As a form of supplemental homeowner's insurance, **HO-6**, also known as a Condominium Coverage, is designed especially for the owners of condos. It includes coverage for the part of the building owned by the insured and for the property housed therein of the insured. Designed to span the gap between what the homeowner's association might cover in a blanket policy written for an entire neighborhood and those items of importance to the insured, typically the HO-6 covers liability for residents and guests of the insured in addition to personal property. The liability coverage, depending on the underwriter, premium paid, and other factors of the policy, can cover incidents up to 150' from the insured property, all valuables within the home from theft, fire or water damage or other forms of loss. It is important to read the Associations By-laws to determine the total amount of insurance needed on your dwelling.

HO-7

For mobile home owners.

HO-8

It is usually called "older home" insurance. It lets house owners with higher replacement cost than the market value insure them at the lower market value rate.

References

1. ^ {{^ Wiening, Eric; George Rejda, Constance Luthardt, Cheryl Ferguson (2002). **Personal Insurance**, 1st edition, Malvern, Pennsylvania: American Institute for Chartered Property Casualty Underwriters/Insurance Institue of America. ISBN 0-89463-108-X.}}
2. ^ [Rental Insurance: What Is Covered And What Is Not?](#). Retrieved on 2006-08-21.

Hospital case management

Hospital case management is a collaborative process that assesses, plans, implements, coordinates, monitors and evaluates the options and services required to meet an individual's health needs, using communication and available resources to promote quality, cost-effective outcomes in the hospital environment.

A hospital case manager coordinates the clinical goals with the patient's goals and manages the financial and quality outcomes of the care provided. With appropriate training, education and direction, hospital case managers can use their skills to affect a balanced clinical and financial outcome.

References

- [Hospital Case Management Datasheet](#)
- [Hospital Case Management Guide](#)
- [Hospital Case Management Newsletter](#)
- [Hospital Peer Review Blog Entry](#)

Hospital peer review

Hospital peer review is the evaluation of a physician's performance or an investigation into an undesired outcome in a medical procedure conducted within a hospital or medical group. Usually peer review involves a panel of reviewers in the same geographic area and in the same specialty.

Peer review is part of the Health Care Quality Improvement Act passed by Congress in 1986. The law establishes a framework for discreetly investigating a physician's performance to assure that he's meeting accepted standards of care.

Several factors impact peer review and have a chilling effect on doctors without improving the quality of care for patients. Many articles in the press have shown doctors subjected to peer review because of being outsiders in their organizations, challenging their institutions and recommending improvements for patient care to their institution. In addition, peer review panels are oftentimes competitors of the doctor being reviewed. In smaller institutions, it's difficult to even find a doctor with the same subspecialty. For this reason, many hospitals are turning to third parties, like independent review organizations, to conduct peer reviews in an unbiased way.

For examples of peer reviews having negative impacts on doctors, see Peerreview.org.

References

- [Peer Review](#) Evaluation of a physician's performance by other physicians, usually within the same geographic area and medical specialty.
- [Best Practices in Hospital Peer Review Whitepaper \(pdf\)](#)
- [History of Hospital Peer Review](#)

I

Indemnity | Independent medical examinations |
Independent medical review | Independent review organization |
Insurable interest | Insurable risk | Insurance bond | Insurance broker
| Insurance contract | Insurance score

Indemnity

Indemnity is a legal exemption from the penalties or liabilities incurred by any course of action. For example, after wars, the losers have sometimes been required to pay indemnities. An [insurance](#) payout is often called an indemnity, or it can be insurance to avoid paying expenses in case of a lawsuit.

In pre-biblical times, most societies allowed for non-equal indemnity; a person who was only injured was often allowed to kill the person responsible in revenge. This was true of many near-eastern and middle-eastern societies. In some cultures, the standard has been like-for-like recompense, as in "an eye for an eye".

An innovation occurred with the development of the Hebrew Bible ("Old Testament"), which put limits on indemnities; in the Biblical view, a maximum limit was applied with the phrase "an eye for an eye, a tooth for a tooth." In later centuries this was anachronistically read by non-Jews as a *promotion* of equal physical indemnity, while many Jews and Bible scholars hold that in its original context its function was to *limit* such actions.

Indemnification is a promise, usually as a contract provision, protecting one party from financial loss. This is sometimes stated as a requirement that one party "**hold harmless**" the other. Indemnification is a type of [insurance](#), which protects one party at the expense of the other. Indemnification can either by direct payment or reimbursement for the loss. Indemnification clauses cannot usually be enforced for intentional tortious conduct of the protected party.

Corporate officers, board members and public officials often require an indemnity clause in their contracts before they perform any work.

In addition, indemnification provisions are common in intellectual property licenses in which the licensor does not want to be liable for misdeeds of the licensee. A typical license would protect the licensor against product liability and patent infringement.

Comment: "hold harmless" does not imply indemnification. The first says I won't make a claim against you; the second says I will pay off claims against you and/or your costs, etc.

Freeing of slaves and servants

Slaveowners are said to suffer a loss whenever their slaves or servants are granted their freedom. A tacit belief exists that harm is caused to slaveowners whenever slaves or servants are released. Slaveowners may be paid to cover their losses.

When the slaves of Zanzibar were freed in 1897, it was by compensation since the prevailing opinion was that the slaveowners suffered the loss of an asset whenever a slave was freed.

In the 1860s in the United States, U.S. President Abraham Lincoln had requested many millions of dollars from Congress with which to pay slaveowners "for the loss of their property." On July 9th, 1868, part #4 of the Fourteenth Constitutional Amendment dismissed all of the claims that slaveowners had been injured by the freeing of the slaves.

In 1807-08, in Prussia, statesman Baron Heinrich vom Stein introduced a series of reforms, the principal of which was the abolition of serfdom with indemnification to territorial lords.

Haiti was required to pay an indemnity of 150,000,000 francs to France in order to atone for the loss suffered by the French slaveowners.

Costs of war

The nation that wins a war may insist on being paid compensations for the costs of the war, even after having been the creator of the war.

- Following the Sino-Japanese War of 1894-95, the Treaty of Shimonoseki required that China pay Japan the sum of 200,000,000 taels (or liangs).
- China incurred an indemnity which resulted from massacres of foreigners during the Boxer Rebellion. The payment of 450,000,000 Haikwan taels, or \$330,000,000 became necessary.

Indemnity in Unification Church belief

In the Unification Church, indemnity is a theological term involved in the absolution of sin. Usually, a sinner may pay 'lesser indemnity' by performing an act of contrition. A secular counterpart to lesser indemnity would be if a child broke a neighbor's window, and the neighbor accepted the child's apology as settling the matter.

The Unification Church believes that on a few occasions God required 'greater indemnity', as when he required the Israelites to wander 40 years in the desert after 10 of the 12 spies sent to Canaan reported faithlessly, "a year for every day". "After the number of the days in which ye searched the land, even forty days, each day for a year, shall ye bear your iniquities, even forty years, and ye shall know my breach of promise," Numbers 13:34.

Independent medical examinations

An independent medical examination (IME) is an evaluation performed by a doctor who is not involved in the patient's care for the purpose of establishing medical and job-related issues.

The worker's compensation insurance carrier or self-insured employer has a legal right to request an independent medical examination. Should an IME determine that the patient's medical condition is not work-related, the insurer can deny the claim and refuse payment. But the insurer must have a physician's medical opinion prior to denying a claim.

IMEs are often conducted for injured workers to determine the cause, extent and medical treatment of an injury. Most requests for IMEs are for discovering whether a worker has reached maximum benefit from treatment or whether any permanent impairment remains from the injury. While an independent medical examination involves a physician and a patient, an independent medical examination does not constitute the normal physician-patient treating relationship.

Although doctors conduct IMEs, they are often criticized for being neither independent nor a real medical examination. The former complaint is because the doctors are hired and paid by the [insurance](#) carrier or a self-insured company. Both the company and the insurer have a financial interest in the outcome of the review. The second is because an IRE is different from what's traditionally thought of as a medical exam, which is different than the type of thorough examination needed to provide a sound basis for important decisions about wage-replacement benefits and medical treatment for injured and sick workers.

Critics say that the independent medical examination is generally limited to the completion of a medical history by the claimant; a review of available documents provided by the treating doctor; a brief medical exam; the reviewing doctor asking questions about the claimant's symptoms and recording his impressions regarding the case and describing the treatment required.

IMEs are also used for determinations used by [insurance](#) carriers in connection with paying medical bills and settling, arbitrating and litigating claims over wage-replacement benefits. They address questions regarding the final degree of disability. Insurance carriers also use IMEs as a safeguard against fraudulent suits and claims

without merit.

References

- [Statutory Definition](#)
- [Independent Medical Examination Article](#)
- [The Independent Medical Examination: Purpose and Process](#)
- [Independent Medical Reviews as an alternative to Independent Medical Examinations \(IMEs\)](#)

Independent medical review

"Independent Medical Review" is the process whereby physicians review medical cases in order to provide claims determinations for health insurance payers, workers compensation insurance payers, or disability insurance payers, etc. Peer review also is used in order to define the review of sentinel events in a hospital environment for quality management purposes such as to look at bad outcomes and determine whether or not there was any mis-diagnosis, mistreatment or any systemic problems involved which lead to the sentinel event.

Physicians who perform independent medical reviews must be Board Certified and in active practice in that same area of treatment. These physicians are contracted by an [Independent review organization](#), medical management companies, third party administrators (TPAs), or utilization review / utilization management companies to provide objective, unbiased determinations on what the root cause of the treatment was, whether or not there is medical necessity, if there was a sentinel event, what was the reason for it, etc.

Terms that medical professionals use that are synonymous with "Independent Medical Review" include "External Medical Review", "Medical Peer Review", "Peer Review", or [Hospital Peer Review](#)(if the sentinel event happened at a hospital).

References

- [AllMed Healthcare Management](#)
- [State of California Independent Medical Review FAQ's](#)

External links

- [NAIRO \(National Association of Independent Review Organizations\)](#)
- [Utilization Review Accreditation Committee \(URAC\)](#)
- [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\)](#)

Independent review organization

An "Independent Review Organization" (IRO) is an entity that conducts independent external medical reviews of adverse health care treatment decisions.

Independent Review Organizations (IROs) began by adjudicating and making decisions on medical claims in the government sector. Recently, they have increasingly been utilized by mainstream health plans and other types of entities that are making such determinations. Independent Review Organizations serve a dual role: they advocate for the patient while making sure that each patient only receives what they deserve based upon medical fact. They also focus on eliminating wasteful and unnecessary treatments.

Types of cases that an Independent Review Organization (IRO) might review include: Medical necessity determinations, standard of care, health plan language interpretations, hospital length of stay, experimental treatment reviews, investigational treatment reviews, physician credentialing reviews, [hospital peer reviews](#), [utilization reviews](#), disability reviews, workers comp reviews and property and casualty medical claims reviews.

References

- [Statutory Definition](#)
- [AllMed Healthcare Management](#)

External links

- [NAIRO \(National Association of Independent Review Organizations\)](#)
- [URAC](#)

Insurable interest

In relation to [insurance](#), the law prevents people taking out an insurance contract on someone else's life (or someone else's property) unless they have an *insurable interest* in that life.

Valid forms of insurable interest include being a spouse, or being financially dependent on the person.

This concept of insurable interest was established to prevent:

- gambling (on the lives of others), under the pretence of being insurance
- the moral hazard of people taking out insurance on someone's life, and then "arranging" for that person to die - so that they can claim on the policy

In the UK this aspect of law depends on statute law: see the Life Assurance Act, 1774 which renders such contracts illegal, and the Marine Insurance Act, 1906, s.4 which renders such contracts void.

Insurable risk

An **insurable risk** is a risk that meets the ideal criteria for efficient [insurance](#). The concept of insurable risk underlies nearly all insurance decisions.

For a risk to be insurable, several things need to be true:

- The insurer must be able to charge a premium high enough to cover not only claims expenses, but also to cover the insurer's expenses. In other words, the risk cannot be catastrophic, or so large that no insurer could hope to pay for the loss.
- The nature of the loss must be definite and financially measurable. That is, there should not be room for argument as to whether or not payment is due, nor as to what amount the payment should be.
- The loss should be random in nature, else the insured may engage in adverse selection (antiselection).

Insurance is not effective for risks that are not insurable risks. For example, risks that are too large cannot be insured, or the premiums would be so high as to make purchasing the insurance infeasible. Also, risks that are not measurable, if insured, will be difficult if not impossible for the insurer to quantify, and thus they cannot charge the correct premium. They will need to charge a conservatively high premium in order to mitigate the risk of paying too large a claim. The premium will thus be higher than ideal, and inefficient.

See also

- [Extended coverage](#)

Insurance contract

An **Insurance contract** determines the legal framework under which the features of an [insurance](#) policy are enforced. Insurance contracts are designed to meet very specific needs and thus have many features not found in many other types of contracts. Many features are similar across a wide variety of different types of insurance policies.

General Features

The insurance contract is a contract whereby the insurer will pay the insured (the person whom benefits would be paid to, or on the behalf of), if certain defined events occur. Subject to the 'fortuity principle', the event must be uncertain. The uncertainty can be either as to when the event will happen (i.e. in a life insurance policy, the time of the insured's death is uncertain) or as to if it will happen at all (i.e. a fire insurance policy).

- Insurance contracts are generally considered **contracts of adhesion** because the insurer draws up the contract and the insured has little or no ability to make material changes to it. This is interpreted to mean that the insurer bears the burden if there is any ambiguity in any terms of the contract.
- Insurance contracts are **aleatory** in that the amounts exchanged by the insured and insurer are unequal and depend upon uncertain future events.
- Insurance contracts are **unilateral**, meaning that only the insurer makes legally enforceable promises in the contract. The insured is not required to pay the premiums, but the insurer is required to pay the benefits under the contract if the insured has paid the premiums and met certain other basic provisions.
- Insurance contracts are governed by the principle of **utmost good faith** (**uberrima fides**) which requires both parties of the insurance contract to deal in good faith and in particular it imparts on the insured a duty to disclose all material facts which relate to the risk to be covered. This contrasts with the legal doctrine that covers most other types of contracts, caveat emptor (let the buyer beware).

Parts of an insurance contract

- Definitions
- Insuring agreement - the part of the contract where the insurer agrees to pay the insured for covered losses
- Declarations - section that notes the identifying information about the insured and/or the insured property, such as name, address, etc.
- Exclusions - section where certain perils that are not covered under the policy are enumerated.

Life insurance specific features

- Incontestability - in the United States, life insurance contracts may not be contested by the insurer at any point after the contract has been in force for two years. The insurer has the burden to investigate fully anything they wish to make sure the insured is an acceptable risk within those two years. Any material misstatements on the insurance application (which generally forms a part of the contract) cannot be used as a reason for the insurer not to pay the death benefit, as long as it does not constitute fraud on the part of the insured. The insurer's only recourse if there is no fraud is they can adjust the death benefit to correct for the correct age or sex of the insured if they are different from what the application noted.

Definitions

- insured - the person whom benefits would be paid to, or on the behalf of, if certain defined events occur.

Insurance bond

An **insurance bond** (or **investment bond**) is a single premium **life assurance** policy for the purposes of investment.

Due to tax laws they are a common form of investment in the UK and some offshore centres.

Traditionally insurance bonds were **with-profits policies** and were often called *with-profit(s) bonds*. Since the introduction of **unitised insurance funds** they have often been marketed as *unit-linked bonds* or *investment bonds*.

Why invest in an insurance bond?

Bonds can provide income or growth and have access to a wide range of investment funds. The tax advantages offered by bonds attract investment after the tax free ISA limit has been used.

Range of investment funds

Traditionally investment bonds only invested in the with-profit fund of the insurance company. However, since the late 1970s the insurers have tried to compete directly with the unit trust market in offering a wide choice of unit-linked investment funds. Geographic and themed funds for almost every sector are available.

One innovation from the insurers is the distribution fund introduced by Sun Life in 1979. A distribution fund is designed to provide a regular rising income for investors. This is achieved by carefully balancing income generating assets such as corporate bonds and/or property with equities. The equity element provides some growth and the other assets the income. Since 2000 **distribution bonds** have been very popular and have replaced with-profit bonds as the low risk investment of choice in the UK.

See also

- [Life assurance](#)
- [With-profits policies](#)
- [Unitised insurance funds](#)

Insurance broker

An **insurance broker** sources (brokes) contracts of insurance on behalf of their customers.

Insurance brokerage in the UK

The term *Insurance Broker* became a regulated term under the **Insurance Brokers (Registration) Act 1977** [\[1\]](#) which was designed to thwart the bogus practices of firms holding themselves as brokers but in fact acting as representative of one or more favoured insurance companies.

Insurance brokerage is largely associated with general insurance (car, house etc.) rather than **life insurance**, although some brokers continued to provide investment and life insurance brokerage until the onset of more onerous Financial Services Authority regulation in 2001.

Insurance broking is carried out today by many types of organisations including traditional brokerages, Independent Financial Advisers (IFAs) and telephone or web-based firms.

References

1. ^ www.biba.co.uk (retrieved 19th July 2006)

External links

- [British Insurance Brokers' Association](#)
- [Financial Services Authority](#)

Insurance score

An **insurance score** is a numerical ranking of a potential insured's financial status (usually credit history). [Actuaries](#) use these scores to determine risk, and charge premiums based on that risk.

Potential insureds who have low insurance scores statistically file more insurance claims and pay higher premiums. Conversely, potential insureds with better insurance scores tend to enjoy lower premium rates, as they are perceived to be better risks.

Sources

- [Insurance Information Institute Dictionary](#)

External Links

- [Insurance Information Institute](#)

K

Keyman Insurance | Knock-for-Knock Agreement

Keyman Insurance

There is no legal definition for **Keyman Insurance**. In general, it can be described as an [insurance policy](#) taken out by a business to compensate that business for financial losses that would arise from the death or extended incapacity of the member of the business specified on the policy. The policy's term does not extend beyond the period of the key person's usefulness to the business. The aim is to compensate the business for losses and facilitate business continuity. Keyman Insurance does not [indemnify](#) the actual losses incurred but compensates with a fixed monetary sum as specified on the insurance policy.

Insurable losses

There are four categories of loss for which Keyman Insurance can provide compensation:

1. Losses related to the extended period when a key person is unable to work, to provide temporary personnel and, if necessary to finance the recruitment and training of a replacement.
2. Insurance to protect profits. For example, offsetting lost income from lost sales, losses resulting from the delay or cancellation of any business project that the key person was involved in, loss of opportunity to expand, loss of specialised skills or knowledge.
3. Insurance to protect shareholders or partnership interests. Typically this is insurance to enable shareholdings or partnership interests to be purchased by existing shareholders or partners.
4. Insurance for anyone involved in guaranteeing businesses loans or banking facilities. The value of insurance cover is arranged to equal the value of the guarantee given by the key person.

Who can be a Keyman?

A Keyman can be anyone directly associated with the business whose loss can cause financial strain to the business. For example, they could be: a Director of a company, a Partner, key sales people, key project managers and people with specific skills or knowledge which is especially valuable to the company.

Taxation

The tax treatment for premiums paid for Keyman Insurance and the treatment of monies received from a claim vary between countries.

See also

- [Life insurance](#)
- [Term life insurance](#)
- [Critical illness insurance](#)

External links

- [Valuing the key person](#)
- [Keyman Insurance](#) – insures some of your biggest business risks.

Knock-for-Knock Agreement

An **knock-for-knock agreement** is an agreement between two **insurance** companies, the policy-holders for whom have sustained losses in the same insured event (usually a motor accident), whereby each **insurer** pays the losses sustained by its own policy-holder, regardless of who was responsible for an accident.

Rationale

The rationale is economic and administrative efficiency: While an insurer may be able to pursue a recovery from the party responsible for an accident or from its policy-holder, this is a costly administrative procedure. The Knock for Knock Agreement simplifies recovery claims among insurers and, over time, attributes costs fairly amongst insurers.

Other contexts

'Knock for knock' is also used in a specific, analogous senses, for example, the following, cited in the "Law at War", from the US Army website [1]:

In addition to handling these routine matters, the chief of the Claims Section participated in the negotiations with the Korean government concerning the payment of foreign claims generated by troops of the Army of the Republic of Korea who were active in South Vietnam. In fact, the MACV Staff Judge Advocate's office was to play a vital role in the negotiation and implementation of certain claims agreements with the Vietnamese government and the Free World allies which came to be known as "knock-for-knock" agreements. These compacts contained provisions whereby the government of one nation waived the claims against the government of the second nation for damage to government property. The agreements did not, however, waive the personal right of an individual to claim damages in the case of negligence of a member of the force of another allied nation. The arrangements nevertheless removed a potential irritant to the relationships among the Free World forces.

LAW AT WAR: VIETNAM 1964-1973, Chapter 5: Claims Administration

L

Lenders mortgage insurance | Liability insurance | Life assurance |
Life insurance | Life table | Line sheet | Lloyd's of London |
Loan protection insurance | Locked Funds Insurance |
Long term care insurance

Lenders mortgage insurance

Lenders Mortgage Insurance (LMI), also known as **Private Mortgage Insurance (PMI)**, is insurance payable to a lender when taking out a mortgage. It is an **insurance** in the case that the mortgagor is not able to repay the loan, and the lender is not able to recover its costs after foreclosing the loan and selling the mortgaged property.

The LMI may be payable up front, or it may be capitalized onto the loan. This type of insurance is usually only charged if the downpayment is less than 20% of the sales price or appraised value (in other words, the LTV or loan to value ratio should be 80% or less). Once the principal reaches 80%, the LMI is no longer required. Cancelling mortgage insurance can be a difficult process. Sometimes lenders will require that LMI be paid for a fixed period, even if the principal reaches 80%. The cancellation request must come from the Servicer of the mortgage to the PMI company who issued the insurance. Often times the Servicer will require a new appraisal to determine the LTV. The cost of mortgage insurance varies considerably based on several factors which include: loan amount, LTV, occupancy (primary, second home, investment property), documentation provided at loan origination, and most of all, credit score.

If a borrower has less than the 20% downpayment needed to avoid a mortgage insurance requirement, they might be able to make use of a second mortgage (sometimes referred to as a "piggy-back loan") to make up the difference . Two popular versions of this lending technique are the so-called 80/10/10 and 80/15/5 arrangements. Both involve obtaining a primary mortgage for 80% LTV. An 80/10/10 program uses a 10% LTV second mortgage with a 10% downpayment, and an 80/15/5 program uses a 15% LTV second mortgage with a 5% downpayment. Other combinations of second mortgage and downpayment amounts might also be available. One advantage of using these arrangements is that under United States tax law, mortgage interest payments may be deductible on the borrower's income taxes, whereas mortgage insurance premiums are not. As such, even though the additional cost of a higher interest rate second mortgage might be similar to the cost of mortgage insurance, the borrower may see a reduction in total costs when the tax benefits are considered.

External links

- [What is 80-10-10 Financing?](#)
- [Buying a home with no little down](#)
- [California Bad Credit Lenders](#)
- [Avoiding PMI](#)

Liability insurance

Liability insurance is a part of the general [insurance](#) system of risk transference. Originally, individuals or companies that faced a common peril, formed a group and created a self-help fund out of which to pay compensation should any member incur loss. The modern system relies on dedicated carriers to offer protection against specified perils in consideration of a premium. Liability insurance is designed to offer specific protection against third party claims, i.e., payment is not typically made to the insured, but rather to someone suffering loss who is not a party to the insurance contract. In general, damage caused intentionally and contractual liability are not covered under liability insurance policies. When a claim is made, the insurance carrier has the right to defend the insured. The legal costs of a defence are not affected by any policy limits, which is useful because they can be significant where long trials are held to determine either fault or the amount of damages.

Overview of Liability Insurance

In many countries, liability insurance is a compulsory form of insurance for those at risk of being sued by third parties for negligence. The most usual classes of mandatory policy cover the drivers of vehicles, those who offer professional services to the public, those who manufacture products that may be harmful, and those who offer employment. The reason for such laws is that the classes of [insured](#) are deliberately engaging in activities that put others at risk of injury or loss. Public policy therefore requires that such individuals should carry insurance so that, if their activities do cause loss or damage to another, money will be available to pay compensation. In addition, there are a further range of perils that prudent people insure against and, consequently, the number and range of liability policies has increased in line with the rise of contingency fee litigation offered by lawyers (sometimes on a class action basis). Such policies fall into three main classes:

Public liability

Industry and commerce are based on a range of processes and activities that have the potential to affect third parties (members of the public, visitors, trespassers, sub-contractors, etc. who may be physically injured or whose property may be damaged or both). It varies from state to state as to whether either or both employer's liability insurance and public liability insurance have been made compulsory by law. Regardless of compulsion, however, most organisations include public liability insurance in their insurance portfolio even though the conditions, exclusions, and warranties included within the standard policies can be onerous.

Private individuals also occupy land and engage in potentially dangerous activities. For example, a rotten branch may fall from an old tree and injure a pedestrian, and many ride bicycles and skateboards in public places. The majority of states requires motorists to carry insurance and criminalise those who drive without a valid policy. Many also require insurance companies to provide a default fund to offer compensation to those physically injured in accidents where the driver did not have a valid policy.

Product

In the emerging compensation culture, consumers are increasingly willing to claim for injury or damage caused by a faulty or defective product. Product liability insurance is not a compulsory class of insurance in all countries, but legislation such as the U.K. Consumer Protection Act 1987 and the EC Directive on Product Liability (25/7/85) require those manufacturing or supplying goods to carry some form of product liability insurance, usually as part of a combined liability policy. The scale of potential liability is illustrated by cases such as those involving Mercedes-Benz for unstable vehicles and Perrier for benzene contamination, but the full list covers pharmaceuticals and medical devices, asbestos, tobacco, recreational equipment, mechanical and electrical products, chemicals and pesticides, agricultural products and equipment, food contamination, and all other major product classes.

Employers

New policies have been developed to cover any liability that might be imposed on an employer if an employee is injured in the course of his or her employment. In many states, the insurers are prohibited from including conditions within their policies that seek to impose any unreasonable conditions precedent to liability, or require the insured either to take reasonable precautions or to comply with current legislation and regulations. In those countries where such insurance is not compulsory, smaller organizations are often driven into bankruptcy when faced by claims not covered by insurance.

Evidentiary rules regarding liability insurance

In the United States, most states make only the carrying of auto insurance mandatory. Where the carrying of a policy is not mandatory and a third party makes a claim for injuries suffered, evidence that a party has liability insurance is generally inadmissible in a lawsuit on public policy grounds, because the courts do not want to discourage parties from carrying such insurance. There are two exceptions to this rule:

1. If the owner of the insurance policy disputes ownership or control of the property, evidence of liability insurance can be introduced to show that it is likely that the owner of the policy probably does own or control the property.
2. If a witness has an interest in the policy that gives the witness a motive or bias with respect to specific testimony, the existence of the policy can be introduced to show this motive or bias.

Liability insurance in pop culture

- In the 1993 film *Jurassic Park*; John Hammond, the park master utilizes liability insurance, as a park infested with dinosaurs is potentially liable for the risk of dinosaur-related injuries; in which a character was pulled by a raptor in the beginning where they deliver a raptor to Isla Sorna.

Life assurance

Life Assurance or **Life Insurance**, is a type of [insurance](#) policy where the insured element is contingent upon human life.

The term *life insurance* is common in the U.S., where the term life assurance is common in the UK. Although these terms are often used interchangeably there is a difference in meaning which is discussed below.

Life based contracts tend to fall into two major categories:

- Protection policies - designed to provide a benefit in the event of specified event, typically a lump sum payment.
- Investment policies - where the main objective is to facilitate the growth of capital by regular or single premiums.

What is life assurance/insurance?

As with all most insurance policies, life assurance is a contract between the *insurer* and the *policy owner (policyholder)* whereby a benefit is paid to the designated Beneficiary (or Beneficiaries) if an *insured event* occurs which is *covered* by the policy. To be a life policy the *insured event* must be based upon life (or lives) of the people name in the policy.

Insured events that may be covered include:

- death,
- diagnosis of a terminal illness,
- diagnosis of a **critical illness**,
- disability due to ill health,
- permanent disability,
- accidental death or
- requirement for long term care. (This list is not exhaustive).

Life policies are typically presented as types legal contracts and the terms of the contract describe the limitations of the insured events. Specific exclusions are often written into the contract to limit the liability of the insurer; for example claims relating to war, riot and civil commotion.

Underwriting

The insurer will collect pertinent information about the life (lives) to be insured and have an underwriter assess the information to establish if the likelihood of a claim for a given individual is above average. The information is typically a series of facts relating to age, lifestyle habits and medical history. The likelihood of death is referred to as *mortality* the likelihood of ill health is referred to as *morbidity*.

It is a general principle that life contracts are written on the basis of *utmost good faith*. That is, the proposer and the insurer both accept that the other is acting in good faith. In practice this means the proposer can assume the contract offers what is shown *prima facie* without having to fine comb the small print and the insurer assumes the proposer is being honest when providing details to underwriter.

When does insurance become assurance?

When a person insures the contents of their home they do so

because of events that might happen; fire, theft, flood etc. **Insurance** is a way of spending a little money to protect against the *risk* of having to spend a lot of money. The point is, when a person insures their home contents they do so to provide protection against something that *might* happen. They hope their home will never be burgled, or burn down but they want to ensure they are financially protected if the worst happens.

When a person insures their life they do so knowing that one day they will die. Therefore a policy that covers death is *assured* to make a payment. The policy offers *assurance* on death; even if the policy has prescribed termination date the policy is still *assured* to pay on death and therefore is an *assurance* policy. Examples include *Term assurance* and *Whole of life assurance*. An accidental death policy is not *assured* to pay on death as the life insured may not die through an accident, therefore it is an insurance policy.

A policy might also be assured for other reasons. For example an **endowment policy** is designed to provide a lump sum on maturity. Under certain types of policy the lump sum is guaranteed. Therefore, this may also be called an assurance policy.

The test of whether a policy is *assurance* or *insurance* is that with an assurance policy the insured event will *definitely* occur (at some point) whereas with an insurance policy there is a *risk* the insured event *might* occur.

Protection policies

Term assurance

Term assurance is a straightforward protection business. A policy holder insures his life for a specified term. If he dies before that specified term is up, his estate or named beneficiary(ies) receive(s) a payout. If he does not die before the term is up, he receives nothing. Policies typically contain exclusions for where a policy holder has a pre-existing condition of which he later dies. In the past these policies would almost always exclude suicide. However, after a number of court judgments against the industry, payouts do occur on death by suicide (presumably except for in the unlikely case that it can be shown that the suicide was just to benefit from the policy).

Investment policies

With-profits policies

Main article: [With-profits policy](#)

Some policies allow the policyholder to participate in the profits of the insurance company these are [with-profits policies](#). Other policies have no rights to participate in the profits of the company, these are *non-profit* policies.

With-profits policies are used as a form of collective investment to achieve capital growth. Other policies offer a guaranteed return not dependent on the companies underlying investment performance; these are often referred to as *without-profit* policies which may be construed as a misnomer.

Pensions

Pensions are a form of life assurance. However, whilst basic life assurance, permanent health insurance and non-pensions annuity business includes an amount of mortality or morbidity risk for the insurer, for pensions there is a longevity risk.

A pension fund will be built up throughout a person's working life. When the person retires, the pension will become *in payment*, and at some stage the pensioner will buy an annuity contract, which will guarantee a certain pay-out each month until death.

Annuities

An annuity is a policy that, after an initial premium or premiums, pays out a sum at pre-determined intervals. For example, a policy holder may pay £10,000, and in return receive £150 each month until he dies; or £1,000 for each of 14 years or death benefits if he dies before the full term of the annuity has elapsed.

Tax considerations

Taxation of life assurance in the United Kingdom

Premiums are not usually allowable against income tax or corporation tax, however qualifying policies issued prior to 14th March 1984 do still attract LAPR (Life Assurance Premium Relief) at 15% (with the net premium being collected from the policyholder).

Non-investment life policies do not normally attract either income tax or capital gains tax on claim. If the policy has as investment element such as an endowment policy, whole of life policy or an investment bond then the tax treatment is determined by the qualifying status of the policy.

Qualifying status is determined at the outset of the policy if the contract meets certain criteria. Essentially, long term contracts (10 years plus) tend to be qualifying policies and the proceeds are free from income tax and capital gains tax. Single premium contracts and those run for a short term are subject to income tax depending upon your marginal rate in the year you make a gain. All (UK) insurers pay a special rate of corporation tax on the profits from their life book; this is deemed as meeting the basic rate (22% in 2005-06) liability for policyholders. Therefore if you are a higher rate taxpayer (40% in 2005-06), or become one through the transaction, you must pay tax on the gain at the difference between the higher and the basic rate. This gain may be reduced by applying a complicated calculation called top-slicing based on the number of years you have held the policy.

Although this may seem complicated the taxation of life assurance based investment contracts is broadly deemed beneficial compared to alternative equity based collective investment schemes (unit trusts, investment trusts and OEICs). One feature which especially favours investment bonds is the ability to draw 5% of the original investment amount each policy year without being subject to any taxation on the amount withdrawn. The withdrawal is deemed by HMRC (Her Majesties Revenue and Customs) to be a payment of capital and therefore the tax calculation is deferred until further encashment above the 5% limit. This is an especially useful tax planning tool for higher rate taxpayers who expect to become basic rate taxpayers at some predictable point in the future (e.g. retirement).

The proceeds of a life policy will be included in the estate for inheritance tax (IHT) purposes. Policies written in trust may fall outside the estate for IHT purposes but it's not always that simple. If in

doubt you should seek professional advice from an IFA (Independent Financial Adviser) who is registered with the government regulator: the Financial Services Authority.

See also

- [Life insurance](#)
- [Insurance](#)
- [With-profits policy](#)
- [Insurance bond](#)

Life insurance

Life insurance (Life Assurance in British English) is a type of [insurance](#). As in all insurance, the insured transfers a risk to the insurer. The insured pays a premium and receives a policy in exchange. The risk assumed by the insurer is the risk of death of the insured.

How life insurance works

There are three parties in a life insurance transaction; the insurer, the insured, and the owner of the policy (policyholder), although the owner and the insured are often the same person. For example, if John Smith buys a policy on his own life, he is both the owner and the insured. But if Mary Smith, his wife, buys a policy on John's life, she is the owner and he is the insured. The owner of the policy is called the Grantee (he will be the person who will pay for the policy).

Another important person involved is the [beneficiary](#). The beneficiary is the person or persons who will receive the policy proceeds upon the death of the insured. The beneficiary is not a party to the policy, but is designated by the owner, who may change the beneficiary unless the policy has an irrevocable beneficiary designation. With an irrevocable beneficiary, that beneficiary must agree to changes in beneficiary, policy assignment, or borrowing of cash value.

The policy, like all insurance policies, is a legal contract specifying the terms and conditions of the risk assumed. Special provisions apply, including a suicide clause wherein the policy becomes null if the insured commits suicide within a specified time for the policy date (usually two years). Any misrepresentation by the owner or insured on the application is also grounds for nullification. Most contracts have a contestability period, also usually a two-year period; if the insured dies within this period, the insurer has a legal right to contest the claim and request additional information before deciding to pay or deny the claim.

The face amount of the policy is normally the amount paid when the policy matures, although policies can provide for greater or lesser amounts. The policy matures when the insured dies or reaches a specified age. The most common reason to buy a life insurance policy is to protect the financial interests of the owner of the policy in the event of the insured's demise. The insurance proceeds would pay for funeral and other death costs or be invested to provide income replacing the deceased's wages. Other reasons include estate planning and retirement. The owner (if not the insured) must have an insurable interest in the insured, i.e. a legitimate reason for insuring another person's life.

The insurer (the life insurance company) calculates the policy prices with an intent to recover claims to be paid and administrative costs, and to make a profit. The cost of insurance is determined using mortality tables calculated by actuaries. [Actuaries](#) are professionals

who use actuarial science which is based in mathematics (primarily probability and statistics). Mortality tables are statistically based tables showing average life expectancies. The three main variables in a mortality table are age, gender, and use of tobacco. The mortality tables provide a baseline for the cost of insurance. In practice, these mortality tables are used in conjunction with the health and family history of the individual applying for a policy in order to determine premiums and insurability. The current mortality table being used by life insurance companies in the United States and their regulators was calculated during the 1980s. There is currently a measure being pushed to update the mortality tables by 2006.

The current mortality table assumes that roughly 2 in 1000 people aged 25 will die during the term of coverage. This number rises roughly quadratically to about 25 in 1000 people for those aged 65. So in a group of one thousand 25 year old males with a \$100,000 policy, a life insurance company would have to, at the minimum, collect \$200 a year from each of the thousand people to cover the expected claims.

The insurance company receives the premiums from the policy owner and invests them to create a pool of money from which to pay claims, and finance the insurance company's operations. Despite popular belief, the majority of the money that insurance companies make comes directly from premiums paid, as money gained through investment of premiums will never, in even the most ideal market conditions, vest enough money per year to pay out claims. Rates charged for life insurance increase with the insured's age because, statistically, a people are more likely to die as they get older.

Since adverse selection can have a negative impact on the financial results of the insurer, the insurer investigates each proposed insured (unless the policy is below a company-established minimum amount) beginning with the application, which becomes part of the policy. [Group Insurance](#) policies are an exception.

This investigation and resulting evaluation of the risk is called underwriting. Health and lifestyle questions are asked, and the answers are dutifully recorded. Certain responses by the insured will be given further investigation. Life insurance companies in the United States support The Medical Information Bureau, which is a clearinghouse of medical information on all persons who have ever applied for life insurance. As part of the application, the insurer receives permission to obtain information from the proposed insured's physicians.

Life insurance companies are never required by law to underwrite or to provide coverage on anyone. They alone determine insurability, and some people, for their own health or lifestyle reasons, are

uninsurable. The policy can be declined (turned down) or rated. Rating means increasing the premiums to provide for additional risks relative to that particular insured.

Many companies use four general health categories for those evaluated for a life insurance policy. These categories are Preferred Best, Preferred, Standard, and Tobacco. Preferred Best means that the proposed insured has no adverse medical history, is not under medication for any condition, and his family (immediate and extended) have no history of early cancer, diabetes, or other conditions. Preferred is like Preferred Best, but it allows that the proposed insured is currently under medication for the condition and may have some family history. Most people are in the Standard category. Profession, travel, and lifestyle also factor into not only which category the proposed insured falls, but also whether the proposed insured will be denied a policy. For example, a person who would otherwise be in the Preferred Best category will be denied a policy if he or she travels to a high risk country.

Upon the death of the insured, the insurer will require acceptable proof of death before paying the claim. The normal minimum proof is a death certificate and the insurer's claim form completed, signed, and often notarized. If the insured's death was suspicious and the policy amount warrants it, the insurer may investigate the circumstances surrounding the death, before deciding whether there is a legal obligation to pay the claim.

Proceeds from the policy may be paid in a lump sum or as an annuity paid over time in regular recurring payments for either for the life of a specified person or a specified time period.

Insurance vs. assurance

The specific uses of the term "insurance" and "assurance" are sometimes confused. In general, the term insurance refers to providing cover for an event that might happen while assurance is the provision of cover for an event that is certain to happen.

When a person insures the contents of their home they do so because of events that might happen; fire, theft, flood etc. **Insurance** is a way of spending a little money to protect against the *risk* of having to spend a lot of money. The point is, when a person insures their home contents they do so to provide protection against something that *might* happen. They hope their home will never be burgled, or burn down but they want to ensure that they are financially protected if the worst happens.

When a person insures their life they do so knowing that one day they will die. Therefore a policy that covers death is *assured* to make a

payment. The policy offers *assurance* on death; even if the policy has a prescribed termination date the policy is still *assured* to pay on death and therefore is an *assurance* policy. Examples include *Term Assurance* and *Whole of Life Assurance*. An accidental death policy is not *assured* to pay on death as the life insured may not die through an accident, therefore it is an insurance policy.

A policy might also be assured for other reasons. For example an **endowment policy** is designed to provide a lump sum on maturity. Under certain types of policy the lump sum is guaranteed. Therefore, this may also be called an assurance policy.

The test of whether a policy is *assurance* or *insurance* is that with an assurance policy the insured event will *definitely* occur (at some point) whereas with an insurance policy there is a *risk* the insured event *might* occur.

With regard to **Whole Life** policies, the question is not whether the insured event (in this case death) will occur, but simply when. If the policy has nonforfeiture values (or **cash values**) then the policy is assured to pay.

During recent years, the distinction between the two terms has become largely blurred. This is principally due to many companies offering both types of policy, and rather than refer to themselves using both insurance and assurance titles, they instead use just the one.

Types of life insurance

Life insurance may be divided into two basic classes – temporary and permanent.

Temporary

This type of insurance is characterized by its defined time period that is named when the contract is initially put into force. In the case of ART (Annual Renewable Term), this is not the case. This is due to the fact that coverage is provided for one year.

Term

Term life insurance (Term Assurance in British English) provides for life insurance coverage for a specified term of years for a specified premium. The policy does not accumulate cash value. Term is generally considered "pure" insurance, where the premium buys protection in the event of death and nothing else. See [Theory of Decreasing responsibility](#) and [Buy term and invest the difference](#).

The three key factors to be considered in term insurance are: face amount (protection or death benefit), premium to be paid (cost to the insured), and length of coverage (term).

Various (U.S.) insurance companies sell term insurance with many different combinations of these three parameters. The face amount can remain constant or decline. The term can be for one or more years. The premium can remain level or increase. A common type of term is called annual renewable term. It is a one year policy but the insurance company guarantees it will issue a policy of equal or lesser amount without regard to the insurability of the insured and with a premium set for the insured's age at that time. Another common type of term insurance is mortgage insurance, which is usually a level premium, declining face value policy. The face amount is intended to equal the amount of the mortgage on the policy owner's residence so the mortgage will be paid if the insured dies.

Guaranteed renewability is an important policy feature for any prospective owner or insured to consider because it allows the insured to acquire life insurance even if they become uninsurable.

Permanent

Permanent life insurance is life insurance that remains in force until the policy matures (pays out), unless the owner fails to pay the premium when due (the policy expires). The policy cannot be cancelled by the insurer for any reason except fraud in the application, and that cancellation must occur within a period of time defined by law (usually two years). Permanent insurance builds a cash value that reduces the amount at risk to the insurance company and thus the insurance expense over time. This means that a policy with a million dollars face value can be relatively inexpensive to a 70 year old because the actual amount of insurance purchased is much less than one million dollars. The owner can access the money in the cash value by withdrawing money, borrowing the cash value, or surrendering the policy and receiving the surrender value.

The three basic types of permanent insurance are **whole life**, **universal life**, and **endowment**.

Whole

Whole life insurance provides for a level premium, and a cash value table included in the policy guaranteed by the company. The primary advantages of whole life are guaranteed death benefits, guaranteed cash values, fixed and known annual premiums, and mortality and expense charges will not reduce the cash value shown in the policy. The primary disadvantages of whole life are premium inflexibility, and the internal rate of return in the policy may not be competitive with other savings alternatives. Riders are available that can allow one to increase the death benefit by paying additional premium. The death benefit can also be increased through the use of policy dividends. Premiums are much higher than term insurance in the short-term, but cumulative premiums are roughly equivalent if policies are kept in force until average life expectancy. Cash value can be accessed at any time through policy "loans". Since these loans decrease the death benefit if not paid back, payback is optional. Cash values are not paid to the beneficiary upon the death of the insured; the beneficiary receives the death benefit only.

Universal

Universal life insurance (UL) is a relatively new insurance product intended to provide permanent insurance coverage with greater

flexibility in premium payment and the potential for a higher internal rate of return. A universal life policy includes a cash account. Premiums increase the cash account. Interest is paid within the policy (credited) on the account at a rate specified by the company. This rate has a guaranteed minimum but usually is higher than that minimum. Mortality charges and administrative costs are charged against (reduce) the cash account. The surrender value of the policy is the amount remaining in the cash account less applicable surrender charges, if any.

With all life insurance, there are basically two functions that make it work. There's a mortality function and a cash function. The mortality function would be the classical notion of pooling risk where the premiums paid by everybody else would cover the death benefit for the one or two who will die for a given period of time. The cash function inherent in all life insurance says that if a person is to reach age 95 to 100 (the age varies depending on state and company), then the policy matures and endows the face value of the policy.

Naturally, it's easy to see that out of a group of 1000 people, if even 10 of them live to age 95, then the mortality function alone will not be able to cover the cash function. So in order to cover the cash function, a minimum rate of investment return on the premiums will be required in the event that a policy matures.

Universal life policies basically guarantee you the death function, but not the cash function - thus the flexible premiums and interest returns. If interest rates are high, then the dividends help reduce premiums. If interest rates are low, then the customer would have to pay additional premiums in order to keep the policy in force. When interest rates are above the minimum required, then the customer has the flexibility to pay less as investment returns cover the remainder to keep the policy in force.

Interestingly enough, UL's are closely linked to relatively stable markets, such as the 3 year treasury bill. What's interesting is not what UL's closely follow - but due to how they're linked, you'll notice that when people are happy about how little they're paying for life insurance with a UL, they're at the same time complaining about how expensive their variable rate mortgages are getting.

The universal life policy addresses the perceived disadvantages of whole life. Premiums are flexible. The internal rate of return is usually higher because it moves with the financial markets. Mortality costs and administrative charges are known. And cash value may be considered more easily attainable because the owner can discontinue premiums if the cash value allows it. And universal life has a more flexible death benefit because the owner can select one of two death benefit options, Option A and Option B.

Option A pays the face amount at death as it's designed to have the cash value equal the death benefit at age 95. Option B pays the face amount plus the cash value, as it's designed to increase the net death benefit as cash values accumulate. Option B does carry with it a caveat. This caveat is that in order for the policy to keep its tax favored life insurance status, it must stay within a corridor specified by state and federal laws that prevent abuses such as attaching a million dollars in cash value to a two dollar insurance policy. The interesting part about this corridor is that for those people who can make it to age 95-100, this corridor requirement goes away and your cash value can equal exactly the face amount of insurance. If this corridor is ever violated, then the UL will in be treated and in effect turn into a [Modified Endowment Contract](#) (or more commonly referred to as a MEC).

But universal life has its own disadvantages which stem primarily from this flexibility. The policy lacks the fundamental guarantee that the policy will be in force unless sufficient premiums have been paid and cash values are not guaranteed.

[Variable universal life Insurance](#) (VUL) is not the same as Universal Life, even though they both have cash values attached to them. These differences are in how the cash accounts are managed; thus having a great affect on how they are treated for taxation.

Limited-pay

Another type of permanent insurance is Limited-pay life insurance, in which all the premiums are paid over a specified period after which no additional premiums are due to keep the policy in force. The most common kind of limited pay is twenty-year limited pay. Another kind is paid-up when the insured is sixty-five.

Endowments

[Endowments](#) are policies which the cash value build up inside the policy, equals the death benefit (face amount) at a certain age. The age this commences is known as the endowment age. Endowments are considerably more expensive (in terms of annual premiums) than either whole life or universal life because the premium paying period is shortened and the endowment date is earlier.

In the United States, the Technical Corrections Act of 1988 tightened the rules on tax shelters (creating [modified endowments](#)). These follow tax rules as [annuities](#) and IRAs do.

Endowment Insurance is paid out whether the insured lives or dies, after a specific period (ie: 15 years) or a specific age (ie: 65).

Accidental death

Accidental death is a limited life insurance that is designed to cover the insured when they pass away due to an accident. Accidents include anything from an injury, but do not typically cover any deaths resulting from health problems or suicide. Because they only cover accidents, these policies are much less expensive than other life insurances.

It is also very commonly offered as "[accidental death and dismemberment insurance](#)", also known as an *AD&D* policy. In an *AD&D* policy, benefits are available not only for accidental death, but also for loss of limbs or bodily functions such as sight and hearing, etc.

Accidental death and *AD&D* policies **very rarely pay** a benefit; either the cause of death is not covered, or the coverage is not maintained after the accident until death occurs. To be aware of what coverage they have, an insured should always review their policy for what it covers and what it excludes. Often, it does not cover an insured who puts themselves at risk in activities such as: parachuting, flying an airplane, professional sports, or involvement in a war (military or not).

Accidental death benefits can also be added to a standard life insurance policy as a rider. If this rider is purchased, the policy will generally pay double the face amount if the insured dies due to an accident. This used to be commonly referred to as a "double indemnity" coverage.

Taxation of life insurance in the United States

Premiums paid by the policy owner are normally not deductible for federal and state income tax purposes.

Proceeds paid by the insurer upon death of the insured are not includable in taxable income for federal and state income tax purposes; however, in the case of no beneficiary, the proceeds may be included in the estate of the deceased and, therefore, subject to federal and state estate and inheritance tax.

Cash value increases within the policy are not subject to income taxes unless certain events occur. For this reason, insurance policies can be a legal and legitimate tax shelter wherein savings can increase without taxation until the owner withdraws the money from the policy.

The tax ramifications of life insurance are complex. The policy owner would be well advised to carefully consider them. As always, Congress or the state legislatures can change the tax laws at any time.

Taxation of life assurance in the United Kingdom

Premiums are not usually allowable against income tax or corporation tax, however qualifying policies issued prior to 14th March 1984 do still attract LAPR (Life Assurance Premium Relief) at 15% (with the net premium being collected from the policyholder).

Non-investment life policies do not normally attract either income tax or capital gains tax on claim. If the policy has as investment element such as an endowment policy, whole of life policy or an investment bond then the tax treatment is determined by the qualifying status of the policy.

Qualifying status is determined at the outset of the policy if the contract meets certain criteria. Essentially, long term contracts (10 years plus) tend to be qualifying policies and the proceeds are free from income tax and capital gains tax. Single premium contracts and those run for a short term are subject to income tax depending upon your marginal rate in the year you make a gain. All (UK) insurers pay a special rate of corporation tax on the profits from their life book; this is deemed as meeting the basic rate (22% in 2005-06) liability for policyholders. Therefore if you are a higher rate taxpayer (40% in 2005-06), or become one through the transaction, you must pay tax on the gain at the difference between the higher and the basic rate. This gain may be reduced by applying a complicated calculation called top-slicing based on the number of years you have held the policy.

Although this may seem complicated the taxation of life assurance based investment contracts is broadly deemed beneficial compared to alternative equity based collective investment schemes (unit trusts, investment trusts and OEICs). One feature which especially favours investment bonds is the ability to draw 5% of the original investment amount each policy year without being subject to any taxation on the amount withdrawn. The withdrawal is deemed by HMRC (Her Majesties Revenue and Customs) to be a payment of capital and therefore the tax calculation is deferred until further encashment above the 5% limit. This is an especially useful tax planning tool for higher rate taxpayers who expect to become basic rate taxpayers at some predictable point in the future (e.g. retirement).

The proceeds of a life policy will be included in the estate for inheritance tax (IHT) purposes. Policies written in trust may fall outside the estate for IHT purposes but it's not always that simple. If in doubt you should seek professional advice from an IFA (Independent

Financial Adviser) who is registered with the government regulator: the Financial Services Authority.

Related life insurance products

Riders are modifications to the insurance policy added at the same time the policy is issued. These riders change the basic policy to provide some feature desired by the policy owner. A common rider is accidental death, which used to be commonly referred to as "double indemnity", which pays twice the amount of the policy face value if death results from accidental causes, as if both a full coverage policy and an accidental death policy were in effect on the insured. Another common rider is premium waiver, which waives future premiums if the insured becomes disabled.

Joint life insurance is either a term or permanent policy insuring two or more lives with the proceeds payable on the first death.

Survivorship life is a whole life policy insuring two lives with the proceeds payable on the second (later) death.

Single premium whole life is a policy with only one premium which is payable at the time the policy is issued.

Modified whole life is a whole life policy that charges smaller premiums for a specified period of time after which the premiums increase for the remainder of the policy.

Group life insurance is term insurance covering a group of people, usually employees of a company or members of a union or association. Individual proof of insurability is not normally a consideration in the underwriting. Rather, the underwriter considers the size and turnover of the group, and the financial strength of the group. Contract provisions will attempt to exclude the possibility of adverse selection. Group life insurance often has a provision that a member exiting the group has the right to buy individual insurance coverage.

Insurance companies have in recent years developed products to offer to niche markets, most notably targeting the **senior** market to address needs of an aging population. Many companies offer policies tailored to the needs of senior applicants. These are often low to moderate face value whole life insurance policies, to allow a senior citizen purchasing insurance at an older issue age an opportunity to buy affordable insurance. This may also be marketed as **final expense insurance**, and an agent or company may suggest (but not require) that the policy proceeds could be used for end-of-life expenses.

Preneed (or prepaid) insurance policies are whole life policies that, although available at any age, are usually offered to older applicants as well. This type of insurance is designed specifically to cover funeral expenses when the insured person dies. In many cases,

the applicant signs a prefunded funeral arrangement with a funeral home at the time the policy is applied for. The death proceeds are then guaranteed to be directed first to the funeral services provider for payment of services rendered. Most contracts dictate that any excess proceeds will go either to the insured's estate or a designated beneficiary.

History

Insurance began as a way of reducing the risk of traders, as early as 5000 BC in China and 4500 BC in Babylon. Life insurance dates only to ancient Rome; "burial clubs" covered the cost of members' funeral expenses and helped survivors monetarily. Modern life insurance started in late 17th century England, originally as insurance for traders: merchants, ship owners and underwriters met to discuss deals at Lloyd's Coffee House, predecessor to the famous [Lloyd's of London](#).

The first insurance company in the United States was formed in Charleston, South Carolina in 1732, but it provided only fire insurance. The sale of life insurance in the U.S. began the late 1760s. The Presbyterian Synods in Philadelphia and New York created the Corporation for Relief of Poor and Distressed Widows and Children of Presbyterian Ministers in 1759; Episcopalian priests organized a similar fund in 1769. Between 1787 and 1837 more than two dozen life insurance companies were started, but fewer than half a dozen survived.

Prior to the American Civil War, many insurance companies in the United States insured the lives of slaves for their owners. In response to bills passed by in California in 2001 and in Illinois in 2003, the companies have been required to search their records for such policies. New York Life for example reported that Nautilus sold 485 slaveholder life insurance policies during a two-year period in the 1840s; they added that their trustees voted to end the sale of such policies 15 years before the Emancipation Proclamation.

Criticism

Life insurance policies have been used as a financial exploit; motivating people to murder somebody after purchasing a life insurance policy (ranging from \$100,000 to \$1,000,000) just for easy money. Despite the suspicion of a multitude of those type of circumstances; the insurance customer pays the high quantity anyway. *Forensic Files* has many episodes about that type of scenario. This scenario is similar to [insurance fraud](#).

See also

- [Life Assurance](#)
- [Term life insurance](#)
- [Permanent life insurance](#)
- [Whole life insurance](#)
- [Universal life insurance](#)
- [Variable universal life insurance](#)
- [Corporate-owned life insurance](#)
- [False insurance claims](#)

External links

- [A History of Life Insurance in the United States through World War I](#)
- [USA Today story on Insuring Slaves](#)
- [Illinois Department of Financial & Professional Regulation, Division of Insurance, Slavery Era Policies Report August 2004](#)

Life table

Table 1. Life table for the total population: United States, 2003

Age	Population at risk, Jan 1, 2003	Deaths, 2003	Rate of mortality, 2003	Life expectancy at birth, 2003	Life expectancy at age, 2003
0-4	1,000,000	10,000	0.01	78.4	78.4
5-9	1,000,000	10,000	0.01	78.3	78.3
10-14	1,000,000	10,000	0.01	78.2	78.2
15-19	1,000,000	10,000	0.01	78.1	78.1
20-24	1,000,000	10,000	0.01	78.0	78.0
25-29	1,000,000	10,000	0.01	77.9	77.9
30-34	1,000,000	10,000	0.01	77.8	77.8
35-39	1,000,000	10,000	0.01	77.7	77.7
40-44	1,000,000	10,000	0.01	77.6	77.6
45-49	1,000,000	10,000	0.01	77.5	77.5
50-54	1,000,000	10,000	0.01	77.4	77.4
55-59	1,000,000	10,000	0.01	77.3	77.3
60-64	1,000,000	10,000	0.01	77.2	77.2
65-69	1,000,000	10,000	0.01	77.1	77.1
70-74	1,000,000	10,000	0.01	77.0	77.0
75-79	1,000,000	10,000	0.01	76.9	76.9
80-84	1,000,000	10,000	0.01	76.8	76.8
85-89	1,000,000	10,000	0.01	76.7	76.7
90-94	1,000,000	10,000	0.01	76.6	76.6
95-99	1,000,000	10,000	0.01	76.5	76.5
100+	1,000,000	10,000	0.01	76.4	76.4

2003 US mortality table,

Table 1, Page 1

In **actuarial science**, a **life table** (also called a **mortality table** or **actuarial table**) is a table which shows, for a person at each age, what the probability is that they die before their next birthday. From this starting point, a number of statistics can be derived and thus also included in the table:

- the probability of surviving any particular year of age
- remaining **life expectancy** for people at different ages
- the proportion of the original birth cohort still alive.

Life tables are usually constructed separately for men and for women because of their substantially different mortality rates. Other characteristics can also be used to distinguish different risks, such as smoking-status, occupation, socio-economic class, and others.

Life tables are also used in biology, and as an alternative to the Pearl Index in studies of birth control effectiveness.

Insurance applications

In order to price [insurance](#) products, and ensure the solvency of insurance companies through adequate reserves, actuaries must develop projections of future insured events (such as death, sickness, disability, etc.). To do this, actuaries develop mathematical models of the causes of these events, as well as the amount and timing of the events. They do this by studying the incidence and severity of these events in the recent past, developing expectations about how the drivers of these past events will change over time (for example, whether the increase in [life expectancy](#) that has been experienced by most generations over prior generations will continue) and, accordingly, develop an expectation for what the timing and amount of such events will be into the future. These expectations usually take the form of tables of percentages indicating the number of such events that will occur in a population, usually based on the age or other relevant characteristics of the population. More specifically, they may be referred to as mortality tables (if they provide rates of mortality, or death), morbidity tables (if they provide rates of disability and recovery), or by other names if they cover other decrements.

The invention of computers and the proliferation of data gathering about individuals has led to fundamental changes in the way actuarial tables are computed for different uses, and a variety of emerging methods factor a range of non-traditional behaviors (e.g. gambling, debt load) into specialized calculations utilized by some institutions for evaluating risk.

The mathematics of life tables

To give an indication of how life tables are used, here are a few sample calculations. These samples may not be obvious to someone who has never studied probability theory, but are intended to introduce new ideas to people who have some understanding of discrete probability theory.

- q_x : the probability that someone aged exactly x will die before their $(x + 1)$ th birthday

- p_x : the probability of surviving from age x to age $(x + 1)$

$$p_x = 1 - q_x$$

- l_x : the number of people who survive to age x

note that this is based on a starting point of l_0 lives, typically 100,000

$$l_{x+1} = l_x \cdot (1 - q_x) = l_x \cdot p_x$$

$$\frac{l_{x+1}}{l_x} = p_x$$

- d_x : the number of people who die aged x

$$d_x = l_x - l_{x+1}$$

- ${}_t p_x$: the probability that someone aged exactly x will survive for t more years, i.e. live up to at least age $x + t$ years

$${}_t p_x = \frac{l_{x+t}}{l_x}$$

Life tables in biology

When biologists use life tables, they will normally also include fertility for each ages. The extra parameter used is

- m_x : expected number of progeny for an individual aged x

Life tables as an alternative to the Pearl Index

When used to study birth control effectiveness, a life table calculates a separate effectiveness rate for each month of the study, as well as for a standard period of time (usually 12 months). Use of life tables eliminates time-related biases (i.e. the most fertile couples getting pregnant and dropping out of the study early, and couples becoming more skilled at using the method as time goes on), and in this way is superior to the more common Pearl Index.

In studies that use life tables, usually two kinds are created. Multiple-decrement life tables report net effectiveness rates which are useful for comparing competing reasons for couples dropping out of a study. Single-decrement life tables report gross effectiveness rates, which can be used to accurately compare one study to another.[\[1\]](#)

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See also

- [Age-adjusted life expectancy](#)

External links

- [Canadian Human Mortality Database](#)
- [UK Government Actuary Department's Interim Life Tables](#)
- [US CDC Mortality Reports](#)

Line sheet

Line sheet is a financial term with two meanings.

A loan line sheet is a work document used by bank examiners who can be either bank regulators or bank "third party" or consulting examiners. The line sheet represents the examiner's review of a bank loan, whether a loan to a company or to an individual. The line sheet initially contains basic information about the particular loan in question, such as the original amount of the loan, the current balance, the monthly payment, etc. The examiner then uses the line sheet to review the loan file, and makes his/her own notations and analysis on the line sheet to document the review of the loan.

A line sheet, or **line guide**, is also be a schedule that a company keeps for guidance showing the top lines that can be written inclusive of [reinsurance](#) on different classes of risk.

External links

- [U.S. Federal Reserve: Minimum Documentation Standards for Loan Line Sheets](#)

Lloyd's of London

Lloyd's of London is a British [insurance](#) market. It serves as a meeting place where multiple financial backers or "*members*", whether individuals (traditionally known as "*Names*") or corporations, come together to pool and spread risk. Unlike most of its competitors in the [reinsurance](#) market, it is neither a company nor a corporation. Its peculiar status is discussed in greater detail below.

Quick facts

[Annual Report and Results 2006](#) Lloyd's Annual Results for 2005 - 06.04.06

Lloyd's reported a strong performance despite 2005 being the worst year on record for natural disasters. They reported under UK GAAP new accounting principles.

Financial highlights:

- balance sheet 2005: £10,992m (2004: £12,169m)
- gross premiums written 2005: £14,982m (2004: £14,614m)
- net claims of £3,309m from most severe hurricane season on record will be met with negligible impact on Central Fund
- market loss £103m (2004: Profit £1,364m)
- improvement in Lloyd's solvency ratio to 379% (2004: 300%)
- Underwriting loss £1.4bn (10% of stamp) [the US Property & Casualty business made a profit of £43.5m]
- Hurricane season USA gave rise to net loss of £3.3bn (gross loss c.£9.9bn)
- Increase in central resources for solvency purposes to £1,838m (2004: £1,663m)

Capital backing

Several different pools of capital back the ability of Lloyd's to pay claims. These pools together are called "Lloyd's chain of security."

1. **Premium trust funds.** Premiums collected from customers are deposited in a trust fund which members cannot access until the dissolution of the annual venture. This trust fund is the first source of payment. If there is money left in the fund at the end of the venture's three year life, it is distributed to members as profit. At the end of 2004, total amount of premium trust funds equaled almost £22 billion.
2. **Funds at Lloyd's.** Members have to deposit additional funds at Lloyd's in case that premiums do not cover claims and the venture ends up in a loss. At the end of 2004, total funds at Lloyd's equaled £9.6 billion.
3. **Personal wealth.** Individual members (names) pledge all of their personal wealth to pay claims. As of the end of 2004, this category of personal wealth totaled less than £220 million, due to declining number of names.

4. **Central fund.** Lloyd's levies a premium on all policies written and deposits the proceeds in a central fund that will pay claims if the members backing a policy go bankrupt and cannot meet their obligations. As of the end of 2004, central fund assets exceeded £550 million.

Lloyd's claim paying ability is rated A by A.M. Best and A by Standard & Poor's.

History

The market began in Edward Lloyd's coffeehouse around 1688 in Tower Street, London. While Lloyd was only the proprietor of the coffeehouse, his establishment was a popular place for sailors, merchants, and shipowners and Lloyd catered to them with reliable shipping news and a variety of services. The shipping industry community frequented the place to discuss insurance deals among themselves. Just after Christmas 1691, the coffee shop relocated to Lombard Street, where a blue plaque commemorates its location.

This arrangement carried on long after Lloyd's death in 1713 until 1774 when the participating members of the insurance arrangement formed a committee and moved to the Royal Exchange as The Society of Lloyd's. The Exchange burned down in 1838 and, although rebuilt, many of Lloyd's early records were lost. In 1871, the first Lloyd's Act was passed in Parliament which gave the business a sound legal footing. The Lloyd's Act of 1911 set out the Society's objectives, which include the promotion of its members' interests and the collection and dissemination of information. By this time the business had become one of the pre-eminent insurers in the world.

In 1965, Hurricane Betsy caused immense damage in the Gulf of Mexico. The membership of the Society, which had been largely made up of market participants, was realised to be too small in relation to the market's capitalisation and the risks that it was underwriting. Lloyd's response was to commission a secret internal inquiry, known as the Cromer Report, which reported in 1968. This Report advocated the widening of membership to non-market participants, including non-British subjects and women, and to reduce the relatively onerous capitalisation requirements (which created a more minor investor known as a 'mini-Name'). The Report also drew attention to the danger of conflicts of interest.

During the 1970s, a number of unrelated issues arose which were to have significant influence on the course of the Society. The first was the tax structure in the UK: capital gains were taxed at 40 percent (check), earned income was taxed in the top bracket at 83 percent, and investment income in the top bracket at 98 percent. Lloyd's income counted as earned income, even for Names who did not work at Lloyd's, and this heavily influenced the direction of underwriting: in short, it was desirable for syndicates to make a (small) underwriting loss but a (larger) investment profit. The losses were 98% funded by the taxpayer while the gains largely accrued to the Names; when Thatcher's government greatly reduced the top rate of income tax, the

proportion of the losses paid by the Names increased astronomically. The investment profit was typically achieved by 'bond washing' or 'gilt stripping': buying the bond 'cum dividend' and selling it 'ex dividend', creating an income profit and a capital loss. Syndicate funds were also moved offshore, (which later created problems through fraud and self-dealing).

Because Lloyd's had turned itself into a tax shelter, the second issue affecting Lloyd's was an increase in its external membership, such that, by the end of the decade, the number of passive investors dwarfed market investors. Thirdly, during the decade a number of scandals had come to light, including the collapse of the Sasse syndicate and the disgrace of Christopher Moran, which had highlighted both the lack of regulation and the legal inability of the Council to manage the Society.

Simultaneously with these developments, were wider issues: firstly, in America, an ever-widening interpretation by the Courts of insurance coverage in relation to workers' compensation in relation to asbestosis losses, which had the effect of creating a huge, and initially unrecognised and then unacknowledged hole in Lloyd's reserves. Secondly, by the end of the decade, almost all of the market agreements, such as the Joint Hull Agreement, which were effectively cartels mandating minimum terms, had been abandoned under pressure of competition. Thirdly, new specialised policies had arisen which had the effect of concentrating risk: these included 'run off policies', under which the liability of previous underwriting years would be transferred, and 'Time and Distance' policies, whereby reserves would be used to buy a guarantee of future income.

In 1980, Sir Henry Fisher was commissioned by the Council of Lloyd's to produce the foundation for a new Lloyd's Act. The recommendations of his Report addressed the 'democratic deficit' and the lack of regulatory muscle.

The Lloyd's Act of 1982 further redefined the structure of the business, and was designed to give the 'external Names', introduced in response to the Cromer Report, a say in the running of the business through a new governing Council.

Immediately after the passing of the 1982 Act, evidence came to light, and internal disciplinary proceedings were commenced against, a number of individual underwriters who had siphoned sums from their businesses to their own accounts. These individuals included a Deputy Chairman of Lloyd's, Ian Posgate, and a Chairman, Sir Peter Green.

In 1986 the UK government commissioned Sir Patrick Neill to report on the standard of investor protection available at Lloyd's. His report was produced in 1987 and made a large number of

recommendations but was never implemented in full.

In the late 1980s and early 1990s, Lloyd's went through the most traumatic period in its history. Unexpectedly large legal awards in US courts for punitive damages led to large claims by insureds, especially on APH (asbestos, pollution and health hazard) policies, some dating as far back as the 1940s. Many of these policies were designed to cover all liabilities not excluded on broadform liability policies.

'Recruit to dilute'

It may be wondered how the *current* Members of Lloyd's could be liable to pay these historical losses. This came about as a result of the Lloyd's accounting practice known as 'reinsurance-to-close'.

Membership of a Lloyd's Syndicate was not like owning shares in a company. An individual "joined" for one calendar year only - the famous 'Lloyd's annual venture'. At the end of the year, the Syndicate as an ongoing trading entity was effectively disbanded.

It was very common for the Syndicate to re-form for the next calendar year with more or less the same membership and the same identifying number. In this way, a Syndicate could *appear* to have a continuous existence going back (in some cases) fifty years or more. But in reality it did not. There would have been fifty separate incarnations of the Syndicate, each one a unique trading entity that underwrote insurance for one calendar year only.

Claims take time to be reported and paid: so the profit or loss for each Syndicate took time to become apparent. Lloyd's practice was to wait three years (that is, 36 months from the beginning of the Syndicate) before 'closing' the year and declaring a result.

For example, a 2003 Syndicate would ordinarily declare its results at the end of December 2005. The Syndicate's members would be paid any underwriting profit during the early part of the 2006 calendar year, in proportion to their 'participation' in the Syndicate; conversely, they would have to reimburse the Syndicate during 2006 for their share of any underwriting loss.

Part of the result would include setting-aside reserves for future claims payments; that is, reserves both for claims that had been notified but not yet paid, and estimated amounts required for 'incurred but not reported' claims. The estimation process is difficult and can be inaccurate; in particular, liability (or long-tail) policies tend to produce claims long after the policies are written.

The reserve for future claims liabilities was set aside in a unique way. The Syndicate bought a [reinsurance](#) policy to pay any future claims: the premium was the exact amount of the reserve. In other words, rather than putting the reserve into a bank to earn interest, the Syndicate transferred liability to pay future claims to a reinsurer. This was 'reinsurance-to-close' - a transaction that allowed the Syndicate to be closed, and a profit or loss declared.

The reinsurer was always another Lloyd's Syndicate. In fact, it was nearly always the succeeding year of the same Syndicate. The members of Syndicate X in 2004 reinsured the future claims liabilities

for members of Syndicate X in 2003. The membership might be the same, or it might not.

In this manner, liability for *past* losses could be transferred year after year until it reached the current Syndicate. A member joining a Syndicate with a long history of such transactions could - and often did - pick up liability for losses on policies written decades previously. So long as the reserves had been correctly estimated, and the appropriate reinsurance-to-close premium paid every year, then all would have been well. But in many cases this had not been possible. No-one could have predicted the surge in APH losses. Therefore, the amounts of money transferred from earlier years by successive 'reinsurance-to-close' premiums to cover these losses were insufficient, and the current members had to pay the shortfall.

(For a fuller explanation of the annual venture, and the various means of reinsuring-to-close, see below.)

As a result a great many individual Members of syndicates underwriting long term liability insurance at Lloyd's faced financial ruin by the mid 1990s.

It is alleged that, in the early 1980s, some Lloyd's officials began a recruitment programme to enrol new Names to help capitalise Lloyd's prior to the expected onslaught of APH claims. This allegation became known as 'recruit to dilute'; in other words, recruit Names to dilute losses. When the huge extent of asbestosis losses came to light in the early 1990s, for the first time in Lloyd's history members refused or were unable to pay the claims, many alleging that they were the victims of fraud, misrepresentation, and negligence. The opaque system of accounting at Lloyd's made it difficult if not impossible for many Names to realise the extent of the liability that they personally and their syndicates subscribed to.

The market was forced to restructure. In 1996 the ongoing Lloyd's was separated from its past losses. Liability for *all* pre-1993 business was compulsorily transferred (by reinsurance-to-close) into a special vehicle called Equitas at a cost of over \$21 billion and enormous personal losses to many Names. It was subsequently discovered that a bribe, described as an 'educational briefing', had been paid by Lloyd's to the Californian Insurance Commissioner in order to prevent him obstructing the formation of Equitas. [1]

The 'recruit to dilute' fraud allegations were heard at trial in 2000 in the case *Sir William Jaffray & Others v. The Society of Lloyd's*, and the appeal was heard in 2002. On each occasion the allegation that there had been a policy of 'recruit to dilute' was rejected: however, at first instance the judge described the Names as *the innocent victims [...] of staggering incompetence* and at appeal the Court found that representations that Lloyd's had a rigorous auditing system were false

([item 376 of the judgment:] [...] *the answer to the question [...] whether there was in existence a rigorous system of auditing which involved the making of a reasonable estimate of outstanding liabilities, including unknown and unnoted losses, is no. Moreover, the answer would be no even if the word 'rigorous' were removed.*) and strongly hinted that one of Lloyd's main witnesses, Murray Lawrence, a previous Chairman, had lied in his testimony ([item 405 of the judgment:] *We have serious reservations about the veracity of Mr Lawrence's evidence [...].*).

Links: [First Instance judgment](#) [Appeal judgment](#)

Lloyd's then instituted some major structural changes. Corporate members with limited liability were permitted to join and underwrite insurance. No new "unlimited" Names can join (although a few thousand existing ones remain). Financial requirements for underwriting were changed, to prevent excess underwriting that was not backed by liquid assets. Market oversight has significantly increased. It has rebounded and started to thrive again after the World Trade Center attacks, but it has not regained its past importance as newly created companies in Bermuda captured a large share of the [reinsurance](#) market.

Structure

Lloyd's is not an insurance company. It is an insurance market of members. As the oldest continuously active insurance marketplace in the world, Lloyd's has retained some unusual structures and practices that differ from all other insurance providers today. Originally created as an unincorporated association of subscribing members in 1774 it was incorporated by the Lloyd's Act 1871, and is currently governed under the Lloyd's Acts of 1871 through to 1982.

Lloyd's itself does not underwrite insurance business, leaving that to its members (see below). Instead the Society operates effectively as a market regulator, setting rules under which members operate and offering centralised administrative services to those members.

Structurally Lloyd's is governed by the *Council of Lloyd's*, an 18 member body roughly equivalent to the board of directors of a company. The Council administers the *Corporation of Lloyd's* which runs the various services and administrative operations of Lloyd's. The Council delegates most of its day to day oversight roles, particularly relating to ensuring the market operates successfully, to the *Franchise Board*.

Businesses at Lloyd's

There are two classes of people and firms active at Lloyd's. The first are *members* or providers of capital, the second are agents, brokers, and other professionals who support the members, underwrite the risks, and represent outside customers (for example, individuals and companies seeking insurance, or insurance companies seeking reinsurance).

Members

For most of Lloyd's history, rich individuals ("Names") backed policies written at Lloyd's with all of their personal wealth (unlimited liability). Since 1994, Lloyd's has allowed corporate members into the market, with limited liability. The losses in the early 1990s devastated the finances of many Names (upwards of 1,500 out of 34,000 Names were declared bankrupt) and scared away others. Today, individual Names provide only 10% of capacity at Lloyd's, with corporations accounting for the rest. No new Names with unlimited liability are admitted, and the importance of individual Names will continue to decline as they slowly withdraw or pass away.

Managing agents

Managing agents sponsor and manage syndicates. They canvas members for commitments of capacity, create the syndicate, hire underwriters, and oversee all of the syndicate's activities. Managing agents may run more than one syndicate.

Members' agents

Members' agents coordinate the members' underwriting and act as a buffer between Lloyd's, the managing agents and the members. They were introduced in the mid 1970s and grew in number until they went bust; there are now only three left (Argenta, Hampden (who have taken over CBS) and LMAS - which has no active Names). It is mandatory that unlimited Names write through a members' agent.

Lloyd's brokers

Outsiders, whether individuals or other insurance companies, cannot do business directly with Lloyd's syndicates. They must hire Lloyd's brokers, who are the only customer-facing companies at Lloyd's. They are therefore often referred to as 'intermediaries'. Lloyd's brokers shop customers' policies among the syndicates, trying to obtain the best prices and terms.

Integrated Lloyd's vehicles (ILVs)

When corporations became admitted as Lloyd's members, they did not like the traditional structure. Insurance companies did not want to rely on the underwriting skills of syndicates they did not control, so they started their own. An integrated Lloyd's vehicle is a group of companies that combines a corporate member, a managing agent, and a syndicate under one ownership. Some ILVs allow minority contributions from other members, but most now try to operate on an exclusive basis.

Current market structure

As of January 31, 2006, Lloyd's of London had the following structure: [2]

- Capital providers
 - 55 corporate members

- 1,497 individual Names with unlimited liability
 - 468 individual members with limited liability
- Market participants
 - 44 managing agents
 - 62 syndicates
 - 164 Lloyd's brokers

Underwriting ventures

Lloyd's syndicates work on the basis of a three year accounting cycle (triennial accounting). Each calendar year a Lloyd's syndicate starts a new insurance venture with a clean book containing no assets or liabilities. In the first year of account, the venture accepts premiums from customers to insure risks for one year (the annual venture). At the end of the year, the venture stops writing new business, but continues to exist to pay claims for the next two years of account. After three years (one year of writing and two years of paying claims) the venture is closed. Its books are balanced, any profits left over after paying out claims and reinsurance-to-close are paid out to members. Each year's venture stands on its own with regard to paying claims and collecting premiums.

Unlike most businesses, accountancy at Lloyd's does not assume the "Going concern" basis, because it is expected that each venture will last for three years and then end. The origin of this accounting cycle was in the shipping business. Syndicates would insure a ship before the start of its voyage, and the three-year period was considered to be the amount of time that it took a ship to sail around the world.

Since the 1930s, many Lloyd's syndicates branched out to underwriting policies providing coverage for general liability, and excess liability beyond that covered by other insurance policies, as well as providing upper layers of [reinsurance](#). Comprehensive unrestricted [general liability](#) policies were very popular in the US market from the late 1940s to mid 1970s. These types of policies involve time spans longer than finite three years of a Lloyd's venture. Insurance policies that cover liabilities that may extend for many years are called long-tail policies because the "tail" of the liability can extend out for many years into the future (for instance, subsidence damage is often not detected until the relevant building is subjected to a structural survey, which typically may not occur for many years until it is about to be sold; it is only at this point that the insured person contacts the insurer, who then has to estimate the cost of rectifying the damage. See also "Asbestosis" below). Short-tail insurance relates to liabilities that are notified and settled quickly (for instance motor vehicle insurance and domestic house contents insurance).

Before an insurance venture can be closed at the end of three years, its liabilities must be balanced by paying out all outstanding claims which have not been paid, and making provisions (setting aside reserves) for any unpaid claims and for any incurred but not reported

losses (IBNRs) which may occur in the future. An example of an IBNR loss is a lawsuit filed in the future seeking damages for business activities that occurred in the insured time period. Another would be relatively minor damage to a salesman's leased company car that was sustained during the period of insurance but not indentified until he returned the car at the end of the lease (because he preferred to live with the damage than to be without the car for the time it was being repaired).

Inside the Lloyd's system, potential incurred but not reported losses are reserved for and transferred (reinsured) at the time of closing by estimating the potential total future liability, and then paying a one time premium for a reinsurance-to-close policy(s) (RITC) which transfers the risk. Typically, the reinsurer is the following underwriting year of the same syndicate, but it may be with another syndicate(s). The transfer of residual capital as RITC premiums from year to year and venture to venture ensures solvency for future liabilities.

Long-tail policies are thus rolled over from year to year and in theory there is always capital available from accumulated RITC premiums to pay claims. It also means that the largest insurance risk typically underwritten by a syndicate are its own reinsurance liabilities for previous years. If the premiums paid for reinsuring previous years were too low, then the syndicate may become undercapitalised thereby forcing it to rely on the unlimited liability of the Names. This follows from Lloyd's practice of policyholders always being paid in full irrespective of any financial difficulties individual Names might have.

The structure of triennial accounting and RITCs is considered by some to be ill-suited to modern business. The root of the problem is the difficulty of forecasting the results of risks which have a long duration (or 'tail'). The system of RITC can convey enormous amounts of latent liability onto the shoulders of latter year investors. If the full nature of the liabilities is not understood and cannot be quantified, then it is impossible to reserve for it properly. This can result in highly subjective opinions determining the outcome of different years of account.

Asbestosis

The classic example of long-tail insurance risks is asbestosis claims. A worker at an industrial plant may have been exposed to asbestos in the 1960s, fallen ill 20 years later, and claimed compensation from his former employer in the 1990s. The employer would report a claim to the insurance company that wrote the policy in the 1960s. However

because the insurer did not understand the full nature of the future risk back in the 1960s, it and its reinsurers would not have properly reserved for it. In the case of Lloyd's this resulted in the bankruptcy of thousands of individual investors who indemnified (via RITC) general liability insurance written from 1940s to the mid 1970s for companies with exposure to asbestosis claims.

Types of policies

Lloyd's syndicates write a diverse range of policies, both direct insurance and reinsurance, covering property, liability, catastrophe and many other risks. Lloyd's has a unique niche in unusual, specialist business such as kidnap and ransom insurance, fine art insurance, aviation insurance, marine, etc.

The general public knows Lloyd's for some unusual policies it has written in the past. Lloyd's has insured:

- Silent film comedian Ben Turpin's eyes from uncrossing.
- Participating automobiles in the carpools involved in the Montgomery Bus Boycott.
- Brooke Shields's and Tina Turner's legs
- Jimmy Durante's nose

Lloyd's is in talks with Virgin Galactic to [insure spaceflights](#).

Miscellaneous

The present Lloyd's building was designed by architect Richard Rogers and was completed in 1986. It stands on the site of the old Roman Forum. The 1925 facade still survives, appearing strangely stranded with the modern building visible through the gates.

In the great Underwriting Room of Lloyd's stands the Lutine Bell, which used to be struck when the fate of a ship "overdue" at its destination port became known. If the ship was safe, the bell would be rung twice: if it had sunk, the bell would be rung once. (This had the practical purpose of immediately stopping the sale or purchase of "overdue" reinsurance on that vessel.) Now it is only rung for ceremonial purposes, such as the visit of a distinguished guest (two rings); and for major world catastrophes, such as 9/11 and the Asian Tsunami Disaster (one ring).

The Pink Floyd bootleg album "The Floyd's of London" is a recording of a September 30, 1971 concert at London's Paris Cinema.

[\[3\]](#)

See also

- [Marine insurance](#)
- [Reinsurance](#)

External links

- [Lloyd's official web site](#)
- [Special report on Lloyd's in *The Economist* \(September 18th, 2004\)](#)
- [Time magazine report on Lloyd's \(February 21t., 2000\)](#)
- [Independent analysis of Lloyd's](#)

Data

- [Yahoo! - Lloyd's Company Profile](#)
- [Lloyd's of London's webcam](#)
- [Lloyd's bulletin board](#)
- [Lloyd's litigation database](#)
- [Commentary on Lloyd's](#)

Criticism

- [Web site by former American names who claim to have been defrauded by Lloyd's](#)
- [US lawyer with commentary on Lloyd's and Equitas](#)

Loan protection insurance

Loan protection insurance, or loan payment protection insurance, is a form of Payment Protection Insurance (PPI). This type of [insurance](#) can help you protect your monthly loan payments if you become unemployed or suffer an accident or sickness.

Loan protection insurance will typically be used to protect a personal loan, car loan or car finance agreement. These finance companies will offer loan protection insurance as part of the loan as they earn commission on each policy sold. However, the premiums (and commissions) are high so shop around to save money. Loan [insurance](#) is available as a stand alone separate policy.

Policies are generally available to people between 18 and 65 who are actively working.

In the event of being unable to work, the policy will pay a monthly benefit to you for a maximum of 12 or 24 months. These loan insurance plans are General [Insurance](#) policies and as such do not accrue any positive cash value.

Locked Funds Insurance

Locked Funds Insurance is a little known hybrid **insurance policy** jointly issued by governments and banks. It is used to protect public funds from tamper by unauthorised parties. In special cases, a government may authorise its use in protecting semi-private funds which are liable to tamper. Terms of this type of insurance are usually very strict. As such it is only used in extreme cases where maximum security of funds is required.

Locked Funds Insurance policies are not exactly insurance policies in the real sense. They possess characteristics similar to both ordinary types of insurance covers and International protectorate documents therefore they are more correctly known as hybrid policies.

They exist in 4 main classes: Class A, B, C and D (in decreasing order of strictness of terms). Additionally, these could either be "Interferral" or "Non-Interferral". The Interferral category allows its terms to be modified by special authority of the issuing government while the terms of the Non-Interferral category can only be modified by clauses present within the policy itself.

Locked Funds Insurance policies provide the highest level of security for funds and are rarely used because of the amount of protocol involved in its issue. Any amount of money protected by this type of cover is virtually impossible to tamper with, except the terms with which the insurance was drawn permits for such.

In effect, it eliminates unauthorised tamper for funds usually in excess of US\$1,000,000 (One million United States Dollars).

Long term care insurance

Long-term care insurance, an [insurance](#) product sold through a licensed insurance agent (one who represents the insurance company) or an insurance broker (one who represents the policyowner) in the United States, helps provide for the cost of long-term care beyond a pre-determined period.

Individuals who require long-term care are generally not sick in the traditional sense, but instead, are old and frail and unable to perform at least two of the basic activities of daily living such as dressing, bathing, eating, toileting, getting in and out of a bed or chair, and walking.

As an individual ages, there is an increased risk of needing long-term care. Medicare (United States) will not cover the expenses of long-term care, but Medicaid will for those who can not afford to pay.

Benefits of Long-Term Care Insurance

Medicaid generally does not cover long term care provided in a home setting; in most cases, Medicaid does not pay for assisted living. However, Medicaid does provide services for people with low income or limited resources who "need nursing home care but can stay at home with special community care services." [\[1\]](#) People who need long term care traditionally prefer care in the home or in a private room in an assisted living facility.

If home care coverage is purchased, long term care insurance can pay for home care, often from the first day it is needed. It will pay for a live-in caregiver, companion, housekeeper, therapist or private-duty nurse up to 7 days a week, 24 hours a day. Assisted living is paid for by long term care insurance as is adult day care, respite care, hospice care and more.

Long-term care insurance can also help pay expenses for caring an individual who suffers from Alzheimer's disease or other forms of dementia.

Other benefits of long-term care insurance:

- Many older individuals may feel uncomfortable relying on their children or family members for support, and find that long-term care insurance could help cover expenses. Without long-term care insurance, the cost of providing these services may quickly deplete the savings of the individual and/or their family.
- Premiums paid on a long-term care insurance product may be

eligible for an income tax deduction depending on the age of the covered person. Benefits paid from a long-term care contract are generally excluded from income.

Types of Long Term Care Policies

Two types of long term care policies are currently being sold: Tax Qualified and Non-Tax Qualified.

- The Non-Tax Qualified was formerly called Traditional Long Term Care insurance. This type has been sold for over 30 years. It often includes a "trigger" called a "medical necessity" trigger. This means that the patient's own doctor, or that doctor in conjunction with someone from the insurance company, can state that the patient needs care for any medical reason and the policy will pay.
- The Tax Qualified long term care insurance policies do not have a Medical Necessity trigger. In addition, they require that a person be expected to require care for at least 90 days, and be unable to perform 2 or more activities of daily living (eating, dressing, bathing, transferring, continence) without substantial assistance (hands on or standby) and that a doctor provides a Plan of Care; or that for at least 90 days, the person needs substantial assistance (hands on, standby or reminding) due to a severe cognitive impairment and a doctor provides a Plan of Care.

Fewer and fewer non-tax qualified policies are available for sale. One reason is because consumers want to be eligible for the tax deductions available when buying a tax-qualified policy. The tax issues can be more complex than the issue of deductions alone, and it is advisable to seek good counsel on all the pros and cons of a tax-qualified policy vs. a non-tax-qualified policy, since the benefit triggers on a good non-tax-qualified policy are better (the tax-qualified policies carrying restrictions - by law - on when the policy holder can receive benefits).

Once a person purchases a policy, the language cannot be changed by the insurance company and the policy is, if an individual policy, guaranteed renewable for life. It can never be cancelled by the insurance company.

Group long term care policies may or may not be guaranteed renewable. Many group plans include language allowing the insurance company to replace the policy with a similar policy, but allowing the

insurance company to change the premiums at that time. Some group plans can be cancelled by the insurance company. These are not recommended.

Complications encountered with eligibility and deductibles

Many policies have deductible periods or elimination days that may differ from 20 to 120 actual calendar days. Many policies require intended claimants to provide proof of 20 to 120 service days of paid care before any benefits will be paid. In some cases the option may be available to select 0 elimination days when covered services are provided in accordance with a Plan of Care. Some may even require that the policy for long-term care be paid up to one year before you become eligible to collect benefits.

External links

- [Medicare \(US\) long term care information](#)
- [Medicaid, US](#)
- [The California Partnership for Long Term Care](#)
- [HealthDecisions.org](#)- Source for Long-Term Care and Health Insurance News

M

Managing general agent | Marine insurance |
Medical billing (United States) | Medical case management |
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Mortgage Life Insurance | Mutual insurance |
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Managing general agent

A **managing general agent** (MGA) is a person or firm authorized by an insurer to transact [insurance](#) business who may have authority to bind the insurer, issue policies, appoint producers, adjust claims and provide administrative support for the types of insurance coverage pursuant to an agency agreement.

Marine insurance

Marine insurance covers the loss or damage of ships and goods at sea. It typically compensates the owner of merchandise for losses sustained from fire, shipwreck, etc., but excludes losses that can be recovered from the carrier. The term abandonment is used to describe the surrender of the ship or goods insured to the insurers, in the case of a *constructive total loss* of the thing insured.

Origins

The origins of marine insurance law were in the law merchant, with the establishment in England in 1601 of a specialised chamber of assurance separate from the other Courts. Lord Mansfield, Lord Chief Justice in the mid-eighteenth century, began the merging of law merchant and common law principles. The establishment of [Lloyd's of London](#), competitor insurance companies, a developing infrastructure of specialists (such as shipbrokers, admiralty lawyers, and bankers), and the growth of the British Empire gave English law a prominence in this area which it largely maintains and forms the basis of almost all modern practice. The growth of the London insurance market led to the standardisation of policies and judicial precedent further developed marine insurance law. In 1906 the Marine Insurance Act was passed which codified the previous common law; it is both an extremely thorough and concise piece of work. Although the title of the Act refers to marine insurance, the general principles have been applied to all non-life insurance.

In the 19th. century, Lloyd's and the Institute of London Underwriters (a grouping of London company insurers) developed between them standardised clauses for the use of marine insurance, and these have been maintained since. These are known as the Institute Clauses because the Institute covered the cost of their publication.

Within the overall guidance of the Marine Insurance Act and the Institute Clauses parties retain a considerable freedom to contract between themselves.

Marine insurance is the oldest type of insurance. Out of it grew non-marine insurance and [reinsurance](#).

Practice

The Marine Insurance Act includes, as a schedule, a standard policy, which parties were at liberty to use if they wished. Because each term in the policy had been tested through at least two centuries of judicial precedent, the policy was extremely thorough. However, it was also expressed in rather archaic terms. In 1991, the London market produced a new standard policy wording known as the MAR 91 form and using the Institute Clauses. The MAR form is simply a general statement of insurance; the Institute Clauses are used to set out the detail of the insurance cover. In practice, the policy document usually consists of the MAR form used as a cover, with the Clauses stapled to the inside. Typically each clause will be stamped, with the stamp overlapping both onto the inside cover and to other clauses; this practice is used to avoid the substitution or removal of clauses.

Because marine insurance is typically underwritten on a subscription basis, the MAR form begins: *We, the Underwriters, agree to bind ourselves each for his own part and not one for another [...]*. In legal terms, liability under the policy is **joint** and not **several**; ie. The underwriters are all liable together, but only for their share or proportion of the risk. If one underwriter should default, the remainder are not liable to pick his share of the claim.

Typically, marine insurance is split between the vessels and the cargo. Insurance of the vessels is generally known as 'Hull and Machinery' (H&M). A more restricted form of cover is 'Total Loss Only' (TLO), generally used as a reinsurance, which only covers the total loss of the vessel and not any partial loss.

Cover may be on either a 'voyage' or 'time' basis. The 'voyage' basis covers transit between the ports set out in the policy; the 'time' basis covers a period of time, typically one year, and is more common.

Protection and Indemnity

A marine policy typically covered only three-quarter of the insured's liabilities towards third parties. The typical liabilities arise in respect of collision with another ship, known as 'running down' (collision with a fixed object is an 'allision'), and wreck removal (a wreck may serve to block a harbour, for example).

In the 19th century, shipowners banded together in mutual underwriting '[clubs](#)' known as Protection and Indemnity Clubs (P&I), to insure the remaining one-quarter liability amongst themselves. These Clubs are still in existence today and have become the model for other specialised and uncommercial marine and non-marine mutuals, for example in relation to oil pollution and nuclear risks.

Clubs work on the basis of agreeing to accept a shipowner as a member and levying an initial 'call' (premium). With the fund accumulated, reinsurance will be purchased; however, if the loss experience is unfavourable one or more 'supplementary calls' may be made. Clubs also typically try to build up reserves, but this puts them at odds with their mutual status.

Actual Total Loss and Constructive Total Loss

These two terms are used to differentiate the degree of proof where a vessel or cargo has been lost.

An Actual Total Loss refers to the situation where the position is clear and a Constructive Total Loss refers to the situation where a loss is inferred. In practice, a Constructive Total Loss might also be used to describe a loss where the cost of repair is not economic; ie a 'write-off'.

The different terms refer to the difficulties of proving a loss where there might be no evidence of such a loss. In this respect, marine insurance differs from non-marine insurance, where the insured is required to prove his loss. Traditionally, marine insurance was seen as an insurance of 'the adventure', with insurers having a stake and an interest in the vessel and/ or the cargo rather than, simply, an interest in the financial consequences of the subject-matter's survival.

Average

'Average' means loss in French. The term average was used by the insurance companies to differentiate between marine and general ie on shore insurance.

In context of marine insurance 'Average' has two meanings:

(1) In marine insurance, in the case of a partial loss, or emergency repairs to the vessel, average may be declared. This covers situations, where, for example, a ship in a storm might have to jettison certain cargo to protect the ship and the remaining cargo. 'General Average' requires all cargo owners to contribute to compensate the losses caused to those whose cargo has been lost or damaged. 'Particular Average' is levied on a group of cargo owners and not all of the cargo owners.

(2) In the situation where an insured has under-insured, ie. insured an item for less than it is worth, average will apply to reduce the amount payable. There are different ways of calculating average, but generally the same proportion of under-insurance will be applied to any payout due.

Excess, Deductible, Co-Insurance, and Franchise

An Excess is the amount payable by the insured and is usually expressed as the first amount falling due, up to a ceiling, in the event of a loss. An excess may or may not be applied. It may be expressed in either monetary or percentage terms. An excess is typically used to discourage moral hazard and to remove small claims, which are disproportionately expensive to handle. The equivalent term to 'excess' in marine insurance is 'deductible'.

A co-insurance, which is typically applied in non-proportional [reinsurance](#), is an excess expressed as a proportion of a claim, e.g. 5%, and applied to the entirety of a claim.

A franchise is a deductible below which nothing is payable and beyond which the entire amount of the sum insured is payable. It is typically used in reinsurance arbitrage arrangements.

Tonnage and Chinamen

These are both obsolete forms of early reinsurance. Both are technically unlawful, as not having **insurable interest**, and so were unenforceable in law. Policies were typically marked P.P.I. (Policy is Proof of Interest). Their use continued into the 1970s before they were banned by Lloyd's, the main market, by which time, they had become nothing more than crude bets.

A 'tonnage' was simply a 'policy' setting out the global gross tonnage loss for a year. If that loss was reached or exceeded, the policy paid out. A 'chinaman' applied the same principle but in reverse: thus, if the limit was not reached, the policy paid out. Specialist Policies

Various types of specialist policy exist, including:

Newbuilding risks: This covers the risk of damage to the hull whilst it is under construction.

War risks: Usual Hull insurance does not cover the risks of a vessel sailing into a war zone. A typical example is the risk to a tanker sailing in the Persian Gulf during the Gulf War. War risks cover protects, at an additional premium, against the danger of loss in a war zone. The war risks areas are established by the London-based War Risks Committee, who have recently moved to include the Malacca Straits as a war risks area due to threat of terrorism.

Increased Value (IV): Increased Value cover protects the shipowner against any difference between the *insured* value of the vessel and the *market value* of the vessel.

Overdue insurance: This is a form of insurance now largely obsolete due to advances in communications. It was an early form of reinsurance and was bought by an insurer when a ship was late at arriving at her destination port and there was a risk that she might have been lost (but, equally, might simply have been delayed). The overdue insurance of the Titanic was famously underwritten on the doorstep of Lloyd's.

Cargo insurance: Cargo insurance is underwritten on the Institute Cargo Clauses, with coverage on an A, B, or C basis, A having the widest cover and C the most restricted. Valuable cargo is known as specie.

Links: Description of cover: [\[1\]](#)

Institute Cargo Clauses: [[www.tradeyorkshire.com/downloads/cargo%20clauses\(1\).pdf](http://www.tradeyorkshire.com/downloads/cargo%20clauses(1).pdf)]

Warranties and Conditions

A peculiarity of marine insurance, and insurance law generally, is the use of the terms **condition** and **warranty**. In English law, a condition typically describes a part of the contract that is fundamental to the performance of that contract, and, if breached, breaches the contract as a whole. By contrast, a warranty is not fundamental to the performance of the contract and breach of a warranty will not lead to a breach of the contract. The meaning of these terms is reversed in insurance law. Thus, the Marine Insurance Act refers to implied warranties, one of the most important of which is that the vessel is seaworthy.^[1]

Salvage and Prizes

The term 'salvage' refers to the practice of rendering aid to a vessel in distress. Apart from the consideration that the sea is traditionally 'a place of safety', with sailors honour-bound to render assistance as required, it is obviously in underwriters' interests to encourage assistance to vessels in danger of being wrecked. A policy will usually include a 'sue and labour' clause which will cover the reasonable costs incurred by a shipowner in his avoiding a greater loss.

At sea, a ship in distress will typically agree to 'Lloyd's Open Form' with any potential salvor. The Lloyd's Open Form is the standard contract, although other forms exist. The Lloyd's Open Form is headed 'No cure - no pay'; the intention being that if the attempted salvage is unsuccessful, no award will be made. However, this principle has been weakened in recent years, and awards are now permitted in cases where, although the ship might have sunk, pollution has been avoided or mitigated.

The Lloyd's Open Form, once agreed, allows salvage attempts to begin immediately. The extent of any award is determined later; although the standard wording refers to the Chairman of Lloyd's arbitrating any award, in practice the role of arbitrator is passed to specialist admiralty QCs.

A ship captured in war is referred to as a prize, and the captors entitled to prize money. Again this risk is covered by standard policies.

Marine Insurance Act, 1906

The most important sections of this Act include:

s.4: a policy without **insurable interest** is void.

s.17: imposes a duty on the insured of *uberrimae fides* (as opposed to *caveat emptor*); ie. that questions must be answered honestly and the risk not misrepresented.

s.18: the proposer of the insurer has a duty to disclose all material facts relevant to the acceptance and rating of the risk. Failure to do so is known as *non-disclosure* or *concealment* (there are minor differences in the two terms) and renders the insurance voidable by the insurer.

s.33(3): *If [a warranty] be not [exactly] complied with, then, subject to any express provision in the policy, the insurer is discharged from liability as from the date of the breach of warranty, but without prejudice to any liability incurred by him before that date.*

s.34(2): where a warranty has been broken, it is no defence to the insured that the breach has been remedied, and the warranty complied with, prior to the loss.

s.34(3): a breach of warranty may be *waived* (ie. ignored) by the insurer.

s.50: a policy may be assigned. Typically, a shipowner might assign the benefit of a policy to the ship-mortgagor.

ss.60-63: deals with the issues of a constructive total loss. The insured can, by notice, claim for a constructive total loss with the insurer becoming entitled to the ship or cargo if it should later turn up. (By contrast an *actual total loss* describes the physical destruction of a vessel or cargo.)

s.79: deals with **subrogation**; ie. the rights of the insurer to stand in the shoes of an **indemnified** insured and recover salvage for his own benefit.

Schedule 1 of the Act contains a list of definitions; schedule 2 contains the model policy wording.

Reference

1. ^ see also: *Bank of Nova Scotia v. Hellenic Mutual War Risks Association (Bermuda) Ltd. ('The Good Luck')* [1991] 2 WLR 1279 and at 1294-5

Bibliography

Birds, J. *Birds' Modern Insurance Law*. Sweet & Maxwell, 2004. (ISBN 0421878002)

Donaldson, Ellis, Wilson (Editor), Cooke (Editor), *Lowndes and Rudolf: Law of General Average and the York-Antwerp Rules*. Sweet & Maxwell, 1990. (ISBN 0420469303)

Medical billing (United States)

Medical billing is the process of submitting and following up on claims to [insurance](#) companies in order to receive payment for services rendered by a healthcare provider. The same process is used for most insurance companies, whether they are private companies or government-owned.

Billing Process

The billing process is an interaction between the provider and the insurance company (payer). It begins with the office visit. After the provider sees the patient, depending on the service provided and the examination, the doctor creates or updates the patient's medical record. This record contains a summary of treatment and demographic information related to the patient. Upon the first visit, the provider will usually give the patient a diagnosis (or possibly several diagnoses), in order to better coordinate and streamline his/her care.

The treatment, diagnosis, and duration of service combine to determine the procedure code that will be used to bill the insurance. The doctor then either provides this information to a medical coder or other billing specialist. From this, a billing record, either paper (usually on a standardized form called an HCFA) or electronic, is generated. This form includes the various diagnoses identified by numbers from the current ICD-9 manual.

This billing record or claim is then submitted either to a clearinghouse that acts as an intermediary for the information (this is typical for electronic billing) or directly to the insurance company. Some of the electronic transactions are sent via Electronic Data Interchange (EDI).

The insurance company (payer) processes the claim. The insurance side of the process begins with testing the validity of the claim for payment. The tests cover patient eligibility for payment, provider credentials, and medical necessity. Upon passing successfully the tests, the payer pays the claim. If a claim fails the tests, the payer rejects the claim and communicates the rejection message to the claim submission source.

Upon receiving the rejection message, the provider must decipher the message, reconcile it with the original claim, make required corrections, and resubmit the claim again. This exchange of claims and messages may repeat multiple times until the claim is paid in full.

The frequency of rejections, denials, and underpayments is high (often reaching 50%), mainly because of high complexity of claims and data entry errors. Straight Through Billing technology, procedures, and training help manage the billing process to receive all payments on time.

Payment

Based on the amount negotiated by the doctor and the insurance company, the original charge is reduced. The amount that is paid by the insurance is known as an allowable. For example, although a psychiatrist may charge \$80.00 for a medication management session, the insurance may only allow \$50.00, so a \$30 reduction would be assessed or otherwise called provider write off.

The insurance payment is further reduced if the patient has a copay, [deductible](#), or a [coinsurance](#). If the patient in the previous example had a \$5.00 copay, the doctor would be paid \$45 by the insurance. The doctor is then responsible for collecting the out-of-pocket expense from the patient. If the patient had a \$500.00 deductible, the patient would have to pay the contracted rate of \$50 ten times until the deductible was met, at which point the insurance would begin to cover a portion of the charge.

A [coinsurance](#) is a percentage of the allowed amount that the patient must pay. It is most often applied to surgical and/or diagnostic procedures. Using the above example, a coinsurance of 20% would have the patient owing \$10 and the insurance company owing \$40.

History

For several decades, medical billing was done almost entirely on paper. However, with the advent of computers it has become possible to efficiently manage large amounts of claims. Many software companies have arisen to provide medical billing software to this particularly lucrative segment of the market. Several companies also offer full portal solutions through their own web-interfaces, which negates the cost of individually licensed software packages.

HIPAA

The billing field has been challenged in recent years due to the introduction of HIPAA. Although providers and insurance companies were restricted further as a result of this new law, patients were also affected. Many found that their insurance companies and health care providers required additional waivers and paperwork related to HIPAA.

As a result of these changes, software companies and medical offices spent thousands of dollars on new technology and were forced to redesign business processes and software in order to become compliant with this new act.

Medical case management

Medical case management is a collaborative process that facilitates recommended treatment plans to assure the appropriate medical care is provided to disabled, ill or injured individuals.

It refers to the planning and coordination of health care services appropriate to achieve the goal of medical rehabilitation. Medical case management may include, but is not limited to, care assessment, including personal interview with the injured employee, and assistance in developing, implementing and coordinating a medical care plan with health care providers, as well as the employee and his/her family and evaluation of treatment results.

In medical case management, a medical case manager (MCM) assesses the individual's case for its appropriateness and cost-effectiveness, based on accepted medical standards of care. MCMs help the individual make informed choices about medical care by communicating the prescribed medical and rehabilitation treatment plan so that the person can return to work in a timely and safe manner while knowing any limitations.

An MCM is normally hired by an employer or insurance carrier to follow or manage the injured worker medically. Most medical case managers are registered nurses (RNs)

Medical case management requires the evaluation of a medical condition, developing and implementing a plan of care, coordinating medical resources, communicated healthcare needs to the individual, monitors an individual's progress and promotes cost-effective care.

External Links

- [On With Life Medical & Vocational Case Management](#)

Medical coder

In **medical billing**, a **medical coder** is a mapping code that allows insurance companies to map the service provider's services to their equivalent. This is necessary in order to be able to submit a claim to an **insurance** for any of the services or items sold to a patient.

Insurance companies publish codes that service providers must use during the process of claim creation. Without this code, service providers will almost certainly not be reimbursed for their services by the insurance companies, leaving the service providers with either of three options:

- Resubmit the claim with the right codes.
- Discard the claim, charge the patient for the loss, and leave the patient with the task of recovering the charges.
- Ignore the claim and take the loss, keeping the customer happy, and hoping that the customer will repeat business in the future.

Medical management company

A medical management company offers a variety of consultative and advisory services for medical practices, such as case management, disease management and utilization management. Its purpose is to provide oversight to the practice of medicine and provide medical practices a sound basis for making practice management decisions.

Services provided by medical management companies to medical practices can include planning, management and plan design. Often they do both project consulting and ongoing advising for medical practices.

Such companies combine an in-depth understanding of the problems and opportunities within the health care system with technical expertise in management, contracts, economics, finance, managed care, systems, health planning, statistics, demographics, and design.

References

- [URAC News Release](#)
- [Direct Medical Management](#)
- [Sorting Out the Patient Care Puzzle: The Role of IROs and Medical Management Companies](#)
- [Medical Management Firms and Independent Review Organizations \(IRO's\)](#)

External Links

- [Medical Management Associates](#)
- [Medical Economics Magazine](#)

Mortality drag

Mortality drag is a term used, in reference to life time annuities, to describe a negative impact that is experienced when an annuity purchased is delayed on a fund from which regular withdrawals are being taken by an individual.

First, it should be understood how a lifetime annuity works. In simple terms, a lump sum is given to an [insurance](#) company that agrees to pay back the sum over the expected lifetime of an individual based on a fixed underlying interest rate or the return on underlying investment after costs have been taken into consideration (It may be helpful to think of it as a loan in reverse from the perspective of the individual purchasing the annuity). Those who live longer than the mean lifespan of an **annuity population** are effectively subsidised by those who die earlier and the insurance company usually assumes the risk of making this work based on [actuarial](#) assumptions. This is known as a **cross subsidy**. An individual may therefore suffer a **mortality loss** or **mortality gain** based on when they actually die. This is a risk they take on board in exchange the guarantee of income for the rest of their lives which cannot be predetermined.

When an individual delays buying an annuity, say between the ages of 60 and 65, the following occur:

1. Some of annuity the population that would have been included in an annuity purchased at the age of 60 will have died, meaning their subsidy has been lost to those purchasing at 65.
2. While the total expected remaining lifespan will have decreased, the mean age of death in an annuity population entering at age 65 will be greater than for a group purchasing at age 60.

In practical terms, those with an invested amount may gain more from the growth of the investment such that they are still better off waiting until they are older to purchase the annuity. However, where an individual decides to take withdrawals from a given lump sum before buying an annuity the impact of mortality drag becomes very significant and increases exponentially with age.

For example, using imaginary actuarial assumptions, an individual with \$100,000 can buy an annuity with an underlying interest rate after costs of 5% that gives them \$8,024 at the end of each year based on a mean life expectancy of 20 years. Instead, they invest in an investment with a fixed return of 5% and take \$8,024 at the end of each year. Three years later they use the residual investment, now

worth \$90,466, to buy an annuity. The mean remaining life expectancy according to the **mortality tables** used by the insurance company will not be 17 years but longer. Let us suppose it is 18 years. The annuity that can now be purchased would give \$7,739 each year. In order to offset the reduction, the alternative investment used for three years would have had to return 5.47%. If an individual waits longer than three years, the additional growth required will increase over time, reflecting the exponential effect of mortality drag.

In the United Kingdom **Pension Income Withdrawal** (formerly and still popularly referred to as **Income Drawdown**) permits an individual to withdrawals from a private pension fund from a permitted age before buying an annuity. The maximum level of withdrawal is controlled, but care must also be taken to maintain the fund at a level that can still buy an equivalent annuity or higher in the future. The risk of reduced general annuity rates in the future must be considered and mortality drag increases exponentially as a person gets older.

Mortgage Life Insurance

Mortgage Life Insurance is a form of [insurance](#) specially designed to protect a repayment mortgage. If the policyholder were to die whilst the mortgage life insurance was in force, the policy will pay out a capital sum that will be just sufficient to repay the outstanding repayment mortgage.

When the insurance commences, the value for the insurance cover must equal the capital outstanding on the repayment mortgage and the policy's termination date must be the same as the date scheduled for the final payment on the repayment mortgage. The insurance company then calculates the annual rate at which the insurance cover should decrease in order to mirror the value of the capital outstanding on the repayment mortgage.

Some mortgage life insurance policies will also pay out if the policyholder is diagnosed with a terminal illness from which the policyholder is expected to die within 12 months of diagnosis.

It should be noted that insurance companies sometimes add other features into their mortgage life insurance policies in order to reflect conditions in their country's domestic insurance market and their domestic tax regulations.

See also

- [Health insurance](#)
- [Critical Illness Insurance](#)

External links

- [Brokers Online – Frequently Asked Questions about Mortgage Life Insurance in the UK](#)
- [CIBC - Frequently Asked Questions about Mortgage Life Insurance in Canada](#)
- [Financial Services Authority - Information about your legal rights when buying insurance in UK](#)

Mutual insurance

Mutual insurance is a type of [insurance](#) where those protected by the insurance (policyholders) also own the organization. Historically most insurance companies began with the mutual (or cooperative) structure, but many have gone through demutualization and become public companies.

List of mutual insurance companies

Japan

- Asahi Mutual Life Insurance Company
The Dai-ichi Mutual Life Insurance Company
Fukoku Mutual Life Insurance Company
Meiji Yasuda Life Insurance Company
Nippon Life Insurance Company
Sumitomo Life Insurance Company

United States

- American Family Insurance
Boston Mutual
CUNA Mutual Life Insurance Company
Guardian Life
Illinois Mutual
Liberty Mutual
Massachusetts Mutual Life Insurance Company
Mutual of America
Mutual of Omaha
Nationwide Mutual Insurance Company
New York Life
North Carolina Mutual
Northwestern Mutual Life
Penn Mutual Life
Physicians Mutual
SBLI USA Mutual Life
Security Mutual of NY
State Farm Insurance

List of demutualized insurance companies

Japan

- Daido Life Insurance Company
The Kyoei Fire & Marine Insurance Co., Ltd.
Mitsui Life Insurance Co., Ltd.
Taiyo Life Insurance Company
Yamato Life Insurance Company

South Africa

- Old Mutual

United States

- John Hancock Mutual Life
Metropolitan Life Insurance Company
MONY
Principal Financial Group
Prudential Insurance

List of defunct mutual insurance companies

Japan

- Chiyoda Mutual Life Insurance Company
Daihyaku Life Insurance Company
Daiichi Mutual Fire & Marine Insurance Company
Nissan Mutual Life Insurance Company
Toho Mutual Life Insurance company
Tokyo Mutual Life Insurance Company

Mortgage payment protection insurance

Mortgage Payment Protection Insurance (sometimes referred to as **MPPI**) is a type of [insurance](#) that is now very popular in the United Kingdom. It is often sold by the company that also arranges your mortgage when you buy a property. It is a way of ensuring that your monthly mortgage payments are made in the event of you becoming unemployed. Unemployment can be caused by accident, sickness or redundancy. It is usually the case that the claimant must register at an unemployment to be eligible for benefit from the Mortgage Payment Protection Insurance. Benefit is usually paid for up to either 12 or 24 months, this is usually sufficient time for the claimant to regain employment. People often believe that if they become unemployed the state will help them out, unfortunately this is no longer true.

The majority of MPPI policies have a fixed premium regardless of sex, age or occupation. The premium is normally expressed as a percentage of £100 per month of benefit selected. More recently [Mortgage Payment Protection Insurance](#) policies are being developed with new premium rating systems. These age related policies provide much cheaper premiums for younger ages making the insurance more affordable.

External links

- <http://www.uk-insurance-online.com/mortgage-protection/mortgage-insurance.htm>
- [Mortgage repayment insurance](#) - A UK organisation.

N

Net premium valuation | No-fault insurance

Net premium valuation

A **Net Premium Valuation** is an [actuarial](#) calculation, used to place a value on the liabilities of a [life insurer](#).

Background

It involves calculating a present value for the contractual liabilities of a contract, and deducting the value of future premiums. Both contractual liabilities, and future premiums in this calculation allow only for mortality and interest. The key with a new premium valuation is that the premiums being valued are theoretical measures - they make no reference to the actual premiums being charged by the insurer.

This technique is a well established actuarial valuation method, that became popular because of its simplicity, consistency, and ease of calculation.

New Methods

With the advent of computers, the more complicated so-called Gross Premium Valuation calculation (which is also more realistic than the Net Premium Valuation) has become much more feasible, and is displacing the archaic Net Premium Valuation further from its historical position of prominence.

See also

- [Gross premiums written](#)
- [Life Assurance](#)
- [Term life insurance](#)
- [Permanent life insurance](#)
- [Whole life insurance](#)
- [Universal life insurance](#)
- [Variable universal life insurance](#)
- [Corporate-owned life insurance](#)
- [False insurance claims](#)

No-fault insurance

No-fault insurance is a type of [automobile insurance](#) where an [insured](#) need only prove that they were injured in an automobile accident (either damage to persons or damage to property) to recover under the policy. There is no need for them to prove that they were not at fault in the accident, or to prove another party was at fault in the accident.

Most U.S. states have a 'traditional tort' liability system for auto insurance where if you have an accident, you must sue to determine who was at fault. But, nine U.S. states and all Canadian provinces give drivers the option to operate under a "no fault" scheme where persons injured in automobile accidents are limited in their ability to sue other drivers or vehicle owners involved in an accident unless their injuries are particularly severe. No fault insurance is only available in jurisdictions which have a no fault scheme.

No fault insurance has the goal of lowering premium costs by avoiding litigation over the cause of the accident, while providing quick payment for injuries caused by the crash. However, critics of no fault point out that it does not punish reckless or negligent drivers in litigation (because many cases don't go to trial), and that it is particularly difficult to sue if a person's injuries leave them with a handicap. Proponents of no fault insurance point out that auto accidents are inevitable and that at-fault drivers should therefore not necessarily be punished, and that the presence of [liability insurance](#) prevents at-fault drivers in tort (or fault) systems from perceiving the lawsuit against them as a punishment.

Critics also point out that many no-fault auto insurance jurisdictions have among the highest auto insurance premiums in the country, although no-fault systems tend to be more popular in areas with higher automobile accident risk.

Several US states have perceived problems inherent in the No-Fault system and have repealed their no-fault laws. Of the 16 states that originally enacted No-fault laws in the early 1970s, seven have repealed them. Colorado repealed its No-Fault system in 2003. Florida's No-Fault system is set to sunset on October 1, 2007, unless lawmakers make changes to the system.

No-fault systems can function in several different ways:

- pure no-fault systems, where lawsuits are completely (or nearly completely) banned and replaced by universal compensation systems where payment is made irrespective of fault. Quebec

has a plan of this nature.

- partial no-fault systems, where lawsuits are precluded in many cases but damages exceeding a certain threshold permit a lawsuit to occur. Ontario has a verbal threshold, where injuries over a certain description are actionable in tort. Manitoba has a monetary threshold, where income loss over a certain amount permits a lawsuit for the income loss over that amount (the balance being covered by the no-fault system).
- choice systems, where residents can choose to be insured by a no-fault system or a tort system, at their will. Saskatchewan was one of the first jurisdictions in the world to implement such a plan, which took effect January 1, 2003.

External links

- Saskatchewan Government Insurance, [http://www.sgi.sk.ca/sgi_internet/news_releases/2002/may_28_2002.htm] Press Release - *Choices in Auto Insurance*.

P

Parametric insurance | Participating provider option | PAYD |
Performance bond | Permanent life insurance | Perpetual Insurance |
Pet insurance | Political risk insurance |
Preferred provider organization | Premium Financing |
Private Mortgage Insurance | Property insurance

P & I insurance

Protection and indemnity insurance, commonly known as "P&I", is [marine insurance](#) against third party liabilities and expenses arising from owning ships or operating ships as principals. It is distinct from other forms of marine insurance purchased by shipowners such as hull insurance and war risk insurance.

Growth of third party liabilities

Although marine insurance dates from the Middle Ages, British shipowners did not feel the need to purchase liability insurance until the 19th century when injured crew members began to seek compensation from their employers, and Lord Campbell's Act of 1846 facilitated claims by passengers or their survivors. The likelihood of claims was greatly increased by the vast numbers of passengers who constituted the flood of emigrants to North America and Australia in the second half of the century. Shipowners were also becoming increasingly aware of the inadequacy of the available insurance cover in respect of damage caused by their ships in collisions with other ships. The usual cover for claims by other ships and their cargo for collision damage excluded altogether one fourth of such damage and, more seriously, was limited in amount. (The maximum recovery under hull policies, including both damage to the insured ship and liability for the damage it had caused, was the insured value of the ship).

The first protection association, the Shipowners' Mutual Protection Society, was formed in 1855. It was intended to cover liabilities for loss of life and personal injury and also the collision risks excluded from the current marine policies, particularly the excess above the limits in those policies. Similar associations were subsequently formed in various cities and towns within the United Kingdom, and later in Scandinavia, Japan, and the United States.

In 1874 the risk of liability for loss of or damage to cargo carried on board the insured ship was first added to the cover provided by a protection Club. The values of cargoes had risen and cargo underwriters, encouraged by the courts, had become keener on recovering their losses from shipowners. After 1874 many Clubs added an indemnity class to provide the necessary cover. Subsequently, most of these separate classes were amalgamated with the class reserved for the original protection risks, and the distinction between the two classes virtually disappeared.

Following the grounding of the Torrey Canyon in 1967, coverage

for the liabilities, costs and expenses arising from oil spills became an increasingly important aspect of P&I insurance.

Coverage today

More than 90% of oceangoing ships today are insured by the mutual P&I Clubs that are members of the International Group of P&I Clubs, [1]. These organizations are the successors of the associations founded in the 19th and early 20th centuries. P&I Club coverage is generally as broad as the liabilities faced by a shipowner *qua* shipowner. The following are the major exceptions to this rule.

Other insurance

Traditionally, one of the main reasons a claim was not covered by P&I insurance was that the managers of the Club thought it should be covered by other insurance that the shipowner should have taken out. That usually meant hull insurance, which paid collision liabilities and, in some cases, liabilities for damage to fixed and floating objects ("FFO"), or war risks insurance.

Mutuality

Another reason a claim might not be covered, or at least not covered in full, is that the shipowner had not taken certain steps to have limited his liability in order to protect the Club. The principal steps expected of shipowners were making sure that the appropriate exculpatory language was inserted in bills of lading and passenger tickets. Today the legal requirements with which shipowners are expected to comply include all the requirements of the flag state concerning marine safety and environmental protection. Another illustration of this principle is the rule that contractual liabilities (those assumed by the shipowner as a matter of contract) are not generally covered.

Moral hazard

P&I Clubs have always taken pains to point out to members that liabilities arising out of the fraudulent misdelivery of cargo, especially delivery of cargo without demanding the production of an original bill of lading, were not covered by P&I insurance. Club managers evidently thought that commerce would grind to a halt if there was a risk that shipowners would conspire with shippers to defraud receivers

and their banks, so they refused to indemnify shipowners under these circumstances. This view was shared by the English courts. *Sze Hai Tong Bank v. Rambler Cycle Co.* [1959] A.C. 576; [1959] 2 Lloyd's Rep. 114 (P.C.)

Wilful misconduct

Losses intended by the insured, or to which it "turned a blind eye" knowing they were likely to happen.

Public policy

There was a time when criminal liabilities were not covered as a matter of course. To say otherwise might even make the underwriter liable for facilitating the crime. It was understood that criminal liability was imposed only for intentional misconduct, and the requirement of fortuity generally foreclosed any question of coverage for criminal liabilities. Today, the situation is vastly more difficult. Statutes in many countries impose "criminal" liability for negligent conduct that damages the environment, under circumstances which do not even rise to the level of "wilful misconduct" under the law of marine insurance. Shipowners justifiably expect their Clubs to pay the fines and penalties thus incurred.

Parametric insurance

Parametric insurance is a type of [insurance](#) that does not indemnify the pure loss, but *ex ante* agrees to make a payment upon the occurrence of a triggering event. The triggering event is often a catastrophic natural event which may ordinarily precipitate a loss or a series of losses.

Transaction cost

Parametric insurance may reduce transaction costs involved in writing and administering insurance policies because there is less need for actual loss assessment for payment of claims or underwriting rating requirements to determine the premium based on liabilities and extent of risk sharing.

Application

Parametric insurance is ideal for low frequency but high intensity losses as in catastrophic perils, weather related risks in agriculture or other economic activities, and risks sought to be covered without sufficient past history of losses captured as insurance readable data.

Users

For example, the Multilateral Investment Guarantee Agency covers hurricane risks based on category parameters and the World Bank designs earthquake parametric insurance based on the rigour parameter of earthquake on an appropriate measuring scale. National Insurance Academy in India propounded the concept of parametric [life insurance](#) premium setting based on variations in mortality table rather than setting constant level premium, which results in wide scale surrenders on improvements in mortality table due to better [life expectancies](#) at various age layers.

Parametric zone

What is parametric insurance?

- Claims are paid based upon the intensity of a pre-defined natural event(s) occurring in a predefined area up to aggregate limit in any one year
- Compensation is paid immediately the event is measured
- Compensation is pre-agreed amount based upon the intensity of the natural disaster
- It is not a contract of indemnity and does not require the loss to be evaluated

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Capability index

Unlike in indemnity insurance, parametric insurance is meaningful provided there is actuarial testing of insurance capability. Capability of parametric insurance to cover the actual loss is measured by Capability index.

Capability index = (specification spread) / (insurance process spread)

Specification spread = USL (Upper specification limit) – LSL (Lower specification limit)

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Central limit concept

USL is the largest value of gain the insured may get because of parameterization rather than indemnification without entrapping the insurer

LSL is the lowest value of residual loss the insured may forgo because of parameterization rather than indemnification without entrapping the insured

Insurance process spread = 6 times standard deviation of indemnities (+ 3 standard deviation) – (- 3 standard deviation)

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Interpretation

If the capability index is equal or sufficiently higher than 1, the parametric insurance program is acceptable as 99.73% of the payouts will be within the allowance provided to indemnity as per central limit concept.

Armed with this robust actuarial test now a host of parametric insurance products are being developed to reduce transaction cost in loss assessment in case of indemnity insurance, particularly when loss experience data is not available in insurance readable form.

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KCMishra Layering Strategy



Transurance

Transurance is an innovation at non-catastrophic levels akin to parametric insurance at catastrophic level according to K C Mishra, the Director of National Insurance Academy, Pune, India. Although businesses spend huge amount annually on property and casualty insurance premiums (In 2005-06 this amount may exceed 1500 billion dollars globally), insured loss recoveries are becoming a smaller portion of the economic costs of insured events. In effect, losses that are collateral to insurable events are becoming larger.

Transurance eliminates complex coverage definitions and loss adjustment processes by defining its coverage as a percentage of the loss recoveries under selected traditional insurance policies. This approach enables the insured to express its view of the relationship between insurable losses and collateral losses as a proportion of the underlying loss recovery. In short, Transurance makes uninsurable losses insurable, in a way that is effective and efficient, and helps insureds deal with the full impact of loss events. By supplementing insurance with Transurance, insurance recoveries will more closely resemble the total economic loss of insured events. Transurance may be substituted for ambiguous policy wording in traditional insurance so as to eliminate coverage disputes.

For the insurer, Transurance represents an opportunity to write more insurance with less transaction costs, since the underwriting effort is minimal and claims adjustment expenses are all but eliminated. The transparency, liquidity, and accessibility are the features Transurance wants to achieve for relatively opaque collateral losses.

To Transure collateral losses, a company must create a relationship between the amount of collateral losses and the size of the insurance recovery it is likely to receive. For example, if a company believes it will have uninsurable collateral losses equal to 20% of the amount it recovers from its insurance policy, it can purchase a Transurance policy that pays 20% of the amount that its insurance policy pays to create a budget for collateral losses.

Transurance enables the insured and the insurer to agree in advance how large the collateral losses will be in relation to the amount of the proceeds from an underlying property or casualty policy. By predefining this relationship, business continuity costs that are coincident to insured losses but aren't covered by traditional insurance because they are too difficult to define or substantiate can now be insured.

In an interdependent economy where supply is on demand, not stockpiled, the adverse effects of large property and casualty losses are frequently magnified and systemic. Absent immediate assurance of business continuity, stakeholders will disengage and form other business relationships. Providing assurance requires financial resources that go beyond traditional insurance. Transurance gives companies an opportunity to leverage the financial efficiency of conventional insurance and helps assure business continuity.

Parametric Insurance and Transurance are complementary. Transurance usage is likely to step out of property and casualty insurance to all areas of insurance, reinsurance and even life insurance and annuity insurance.

Participating provider option

A Participating (or Preferred) Provider Option (PPO) is a form of [health insurance](#). Simply put, this type of plan extends higher levels of benefits when members choose to obtain services from participating (preferred) providers.

A PPO or Preferred Provider Organization is a group system of health care organized by an insurance company. All types of physicians, health care providers, hospitals and clinics sign contracts with the PPO system to provide care to its insured people. These medical providers agree to accept the PPO's fee schedule and guidelines for its managed medical care.

The insured members pay a co-payment at the time of each medical service. For example, at the time of an office visit to a physician, the patient pays \$10. Out of pocket expenses can and do apply. Each person will also have a yearly deductible to pay out of his/her pocket, before the insurance company will start paying medical fees. The insurance usually pays a percentage of the medical fees (often 80%) for the in-network doctor, with the patient responsible for the remainder of the bill. If the person wants to see an out-of-network doctor, he/she may do so without permission; but the deductible for out-of-network services may be higher and the percentage the insurance will pay may be lower. In other words, the patient will be responsible for a greater part of the fee. This encourages the people insured with a PPO to use the physicians, other medical providers and hospitals in their network.

Advantages of a PPO include the flexibility of seeking care with an out-of-network provider if so desired, even though it is more out-of-pocket expense for the patient. PPO networks also have prescription services, which provide prescription drugs at a reduced cost. The overall premium for a PPO is less than for individual health coverage and will often include more covered medical services. There is a large network of medical providers representing large geographic areas.

PAYD

PAYD (or Pay As You Drive) is a method of [motor insurance](#) whereby insurance premiums are dependent upon vehicle usage, particularly distance travelled.

External links

- [Pay-As-You-Drive Vehicle Insurance](#)

Performance bond

A **performance bond** is a **bond** issued by an **insurance** company to guarantee satisfactory completion of a project by a contractor.

For example, a contractor may cause a performance bond to be issued in favor of a client for whom the contractor is constructing a building. If the contractor fails to construct the building according to the specifications laid out by the contract (most often due to the bankruptcy of the contractor), the client is guaranteed compensation for any monetary loss up to the amount of the performance bond.

Performance bonds are commonly used in the development of real property, where an owner or investor may require the developer to assure that contractors or project managers procure such bonds in order to guarantee that the value of the work will not be lost in the case of an unfortunate event (such as insolvency of the contractor).

The term is also used to denote a collateral deposit intended to secure a Futures contract, commonly known as margin.

External links

- [Performance Bonds - How times change](#)

Permanent life insurance

Permanent life insurance is a form of [life insurance](#) such as whole life or [endowment](#), where the policy is for the life of the insured, the payout is assured at the end of the policy (assuming the policy is kept current) and the policy accrues cash value.

This is compared with [Term life insurance](#) where insurance is purchased for a specified period (typically a year, or for level periods such as 5, 10, 15, 20 even 25 and 30 years) where a death benefit is only paid to the [beneficiary](#) if the insured dies during the specified period.

Permanent life insurance originally was offered as a fixed premium fixed return product known as [whole life insurance](#) also known as cash surrender life insurance. This offered consumers guaranteed cash value accumulation and a consistent premium. Consumers later wanted more flexibility which was offered in the form of [universal life insurance](#). Universal life insurance allows consumers flexibility in when premiums are to be paid and the amount that they would be. Universal life policies also allowed consumers to permanently withdraw cash from the policy without the interest associated with the loan provisions in whole life policies. Universal life policies retained the fixed investment performance of whole life policies. **Variable life insurance** follows the mold of whole or universal life, but it shifts the investment risk to the consumer along with the potential for greater returns. [Variable universal life insurance](#) combines this with the flexibility in premium structure of universal life to create the most free form option for consumers to manage their own money (at their own risk). Variable universal life insurance policies are considered due to the favorable tax treatment of all permanent life insurance policies and their potential for greater returns than other insurance products.

Payout likelihood

Because Permanent insurance programs must always pay out, the cost of insurance is considerably higher than term insurance. Term insurance is referred to as pure death benefit with no cash accumulation vehicle tied to it. Because of this term programs remain 8 to 10 times less expensive than a permanent program for the same coverage. Most people are drawn to term insurance for the low cost and ability to invest the difference in separate financial products.

See also

- [Life insurance](#)

Perpetual Insurance

Perpetual insurance is a type of **homeowners insurance** policy written to have no term, or date, when the policy expires. From the effective start date, the coverage exists for perpetuity. The insurer deposits money, called a deposit premium, with the insurer for **insurance** for the life of the risk. The deposit is usually ten times larger than the cost of a non-refundable, annual premium for an equivalent policy with a one-year term. The insurer must earn enough income from investing the deposits to cover losses and operating expenses for the model to be economically viable. Upon cancellation, the insured is entitled to a full refund of the initial deposit premium, usually without interest. Perpetual insurance, first issued in the U.S. in Philadelphia in 1752, is still used for fire and homeowner's insurance.

There are still a few companies in the United States that offer perpetual insurance:

- Baltimore Equitable
The Contributionship Companies
Mutual Assurance Society of VA
Saucon Mutual Insurance

In the United States, there are also tax advantages to perpetual insurance. The deposit premium does not yield any income to the insured. However, the expense of the annual premium for term homeowners insurance is eliminated. Therefore, the tax-adjusted, equivalent rate of return to the insured homeowner on the deposit premium can be calculated by taking the gross amount of money he or she needs to earn to net the amount of an annual premium for a term policy, divided by the amount of the deposit premium. For example, a house which costs \$150,000 may typically be charged an annual premium of \$1,000 for a term policy. That same house would likely require a \$10,000 single deposit premium for a perpetual insurance policy of equivalent coverage. A person in the 28% Tax bracket would need to earn \$1389 in gross income to pay the annual premium. Since that amount no longer needs to be paid annually, the tax-adjusted, equivalent rate of return to the insured homeowner on the single deposit premium would be \$1389 divided by \$10000, in other words, 13.89%.

Pet insurance

Pet Insurance pays the veterinary costs if your pet is ill or has an accident. Some policies also pay out if the pet dies, is lost or stolen.

Policies usually limit the amount they will pay out either by capping the total sum they will pay out in a year, or place a limit per illness or accident, or place a cap per claim with the claim period being limited to a year.

The pet owner will have to make a payment towards any claim.

Pet insurance will not pay for preventative veterinary care (such as vaccinations) or elective veterinary care (such as neutering).

Whilst known as Pet Insurance, insurance is normally only available for cats and dogs. (Specialist insurance is available for horses)

Pet Insurance is available in all developed countries and the precise details of the insurance cover will vary from policy to policy.

By far the pet insurance company with the biggest piece of the pie is VPI. VPI covers over 6400 illnesses, injuries and accidents, there is also additional coverage for preventive care such as vaccines, heartworm prevention medications and flea control.

External links

External links

- **Website** [\[1\]](#) - Petquote offers comprehensive pet insurance for cats and dogs from PetPlan and Pinnacle.
- **Website** [\[2\]](#) - Veterinary Pet Insurance (VPI): The nation's oldest and largest provider of health insurance for pets.
- **Downloadable Guide** [\[3\]](#) - Pet Insurance Comparison Shopping Guide - Know What Questions to Ask
- **Article** [\[4\]](#) - 10 points to consider when buying Pet Insurance
- **Royal Society for the Protection of Animals** [\[5\]](#) - Animal Care

Political risk insurance

Political risk insurance can be taken out by businesses, of any size, having operations in countries in which there is a risk that revolution or other political conditions will result in a loss.

Political risk [insurance](#) is available for several different types of political risk, including (among others):

- Political violence, such as revolution, insurrection, civil unrest, terrorism or war;
- Governmental expropriation or confiscation of assets;
- Governmental frustration or repudiation of contracts;
- Wrongful calling of letters of credit or similar on-demand guaranties; and
- Inconvertibility of foreign currency or the inability to repatriate funds.

As with any insurance, the precise scope of coverage is governed by the terms of the insurance policy.

While political risk insurance policies are sometimes manuscripted for specific situations, the major political risk insurers have standard forms for the coverages that they issue.

References

- K C Mishra. "[For political risk, insurance isn't all](#)", *Rustomjee, Diligent Media Corporation*, May 5, 2006. Retrieved on 2006-07-17.

External links

- Daniel Wagner. "[Political Risk Insurance in Asia: Who Purchases It, Where, and Why](#)", *International Risk Management Institute*, July 2002. Retrieved on 2006-07-17.

Preferred provider organization

In [health insurance](#), a **preferred provider organization** (or "PPO") is a managed care organization of medical doctors, hospitals, and other health care providers who have covenanted with an insurer or a third-party administrator to provide health care at reduced rates to the insurer's or administrator's clients.

The idea of a preferred provider organization is that the providers will provide the insured members of the group a substantial discount below their regularly-charged rates. This will be mutually beneficial in theory, as the insurer will be billed at a reduced rate when its insured utilize the services of the "preferred" provider and the provider will see an increase in its business as almost all insureds in the organization will use only providers who are members. Even the insured should benefit, as lower costs to the insurer should result in lower rates of increase in premiums. Preferred provider organizations themselves earn money by charging an access fee to the insurance company for the use of their network. They negotiate with providers to set fee schedules, and handle disputes between insurers and providers. PPOs can also contract with one another to strengthen their position in certain geographic areas without forming new relationships directly with providers.

PPOs differ from health maintenance organizations (HMOs), in which insureds who do not use participating health care providers receive little or no benefit from their health plan. PPO members will be reimbursed for utilization of non-preferred providers, albeit at a reduced rate which may include higher deductibles, co-payments, lower reimbursement percentages, or a combination of the above. Exclusive Provider Organizations (EPOs) are similar to PPOs, except that they do not provide any benefit if the insured chooses a non-preferred provider, except for some exceptions in cases of emergencies. Some state regulations limit how much and under what circumstances an insurance plan can lower the insured's benefit for using a non-preferred provider.

Other features of a preferred provider organization generally include utilization review, where representatives of the insurer or administrator review the records of treatments provided to verify that they are appropriate for the condition being treated rather than largely or solely being performed to increase the amount of reimbursement due, a procedure that many providers resent as second-guessing. Another near-universal feature is a pre-certification requirement, in which scheduled (non-emergency) hospital admissions

and, in some instances outpatient surgery as well, must have prior approval of the insurer and often undergo "utilization review" in advance.

The rise of PPOs was credited by some with a reduction in the rate of medical inflation in the U.S. in the 1990s. However, as most providers have become members of most of the major preferred provider organizations sponsored by major insurers and administrators, the competitive advantages outlined above have largely been reduced or almost entirely eliminated, and medical inflation in the U.S. is again advancing at several times the rate of general inflation. Furthermore, passive PPOs are now a part of the marketplace. These PPOs obtain discounts for insurance companies on indemnity and out-of-network claims, and often take as their fee a portion of the discount obtained. The aspects of utilization review and pre-certification are now widely used even in traditional "indemnity" plans, and are widely regarded as being essentially permanent features of the American health care system.

PPOs can also create inefficiencies and ironies in the health care industry. Though PPOs often require insurers to pay a claim within a certain timeframe in order to take the PPO discount, calculating the PPO discount and having the insurer pay the PPO's access fee is still one more step-- and one more opportunity for mistakes and delays--in the already-complex process of paying for health care in the United States. Since PPOs have more power in their relationship with providers, they can still provide a benefit to insured patients. Uninsured patients may, however, be unable to obtain these discounts--even if they pay cash.

Premium Financing

Premium Financing involves the lending of funds to a person or company to cover the cost of an [insurance premium](#). Premium finance loans are often provided by third party finance entity known as a Premium Financing Company; however [insurance companies](#) and brokerages occasionally provide premium financing services. [1]

To finance a premium, the individual or company requesting insurance must sign a premium finance agreement with the premium finance company. This is a loan contract that lasts for the life of the insurance coverage. The premium finance company then pays the insurance premium and bills the individual or company, usually in monthly installments, for the cost of the loan.

Benefits

There are a number of benefits to financing an insurance premium.

[2] These include:

- Eliminates the requirement for a large up-front payment to an insurance company.
- Multiple insurance policies can be attached to a single premium finance contract, allowing for a single payment plan to cover all insurance coverage.
- Premium financing is often transparent to the individual or company insured. Brokers transmit the completed premium finance agreement to the premium finance company, and the insurance holder is billed as they would be for any other typical insurance policy.

Private Mortgage Insurance

Private Mortgage Insurance, or **PMI**, is generally required in the U.S. for home loans which are greater than 80% of the purchase price of the home. PMI is a credit enhancement which permits borrowers to get into homes sooner and with less money down, however PMI can be avoided by receiving an alternate form of housing such as an 80/20 housing.

This is insurance that a lender requires due to the risk of a loan going in default. The borrower pays the premium for the insurance, but the lender receives the benefits. Therefore, it is a fee that the borrower has to pay until they can prove that they are not a big risk of defaulting.

See also

- [Lenders mortgage insurance](#)

Property insurance

Property insurance provides protection against most risks to property, such as fire, theft and some weather damage. This includes specialized forms of insurance such as fire insurance, flood insurance, [earthquake insurance](#), [home insurance](#) or [boiler insurance](#). Property is [insured](#) in two main ways - open perils and named perils. Open perils cover all the causes of loss not specifically excluded in the policy. Common exclusions on open peril policies include damage resulting from earthquakes, floods, nuclear incidents, acts of terrorism and war. Named perils require the actual cause of loss to be listed in the policy for insurance to be provided. The more common named perils include such damage causing events as fire, lightning, explosion and theft.

See also

- [casualty insurance](#)

External links

- [Fire insurance](#) (EH.Net Encyclopedia of Economic History)

R

RAND Health Insurance Experiment | Reinsurance |
Return of premium life insurance

RAND Health Insurance Experiment

The **RAND Health Insurance Experiment** (RAND HIE) was a comprehensive study of health care cost, utilization and outcome in the United States. It is the only randomized study of health insurance, and the only study which can give definitive evidence as to the causal effects of different health insurance plans. Most health economics studies are observational, and can only give associational evidence. Although the study was conducted in the 1970's and early 1980's, the results are still highly relevant, since RAND HIE is the only study which can make causal statements.

In 1971, a RAND group, led by health economist Joe Newhouse and including statistician Carl Morris, established an [insurance company](#) using funding from the then-United States Department of Health, Education, and Welfare. The company insured 5809 people, randomly assigned to insurance plans that either had no cost-sharing, 25, 50 or 95% copayment rates with a maximum annual payment of \$1000.

The study found higher copayment rates reduced spending because people did not seek care as frequently; the care which was not consumed by the higher cost-sharing group was equally necessary and unnecessary care. In the general study group, there was no measurable difference in health states between the groups, but for subgroups such as the chronically ill, chronic illnesses such as diabetes and high blood pressure were not as well controlled among the high cost-sharing group than among the low cost-sharing groups.

The study opened the way for increased cost-sharing for medical care in the 1980's and 1990's.

See Free for All by Joe Newhouse and the RAND Health Insurance Experiment group for the full details of the study, design, results, and discussion. It is a well-written book.

Reinsurance

Reinsurance is a means by which an insurance company can share - or "lay-off" - the risk of large losses with other insurance companies.

It works in exactly the same way as insurance, although on a much larger scale. Put simply, the year that your house burns down, a thousand other houses don't. The premium paid by those thousand policyholders covers the cost of rebuilding your one house, plus (hopefully) a profit for the insurer. And as long as nothing happens to increase the frequency of domestic fire losses, an insurance company will have no trouble paying claims.

Problems arise when a catastrophic event destroys *all* insured houses in a given area - for example, a hurricane. No amount of premium can cover the claims that the insurer will now have to pay. Therefore, the company itself buys insurance against that event happening. This is Reinsurance - the spreading of very large risks amongst a pool of mostly specialist reinsurers operating on a global basis. Again put simply, the year that there is a hurricane in Florida, there isn't an earthquake in Japan.

Functions of Reinsurance

Protecting against catastrophic events is only one kind of reinsurance. There are many reasons an insurance company will choose to reinsure as part of its responsibility to manage a portfolio of risks for the benefit of its policyholders and investors.

Risk transfer

The main use of reinsurance is to allow the ceding company to assume individual risks greater than its size would otherwise allow, and to protect the cedant against catastrophic losses. Reinsurance allows an insurance company to offer larger limits of protection to a policyholder than its own capital would allow. If an insurance company can safely write only \$5 million in limits on any one policy, it can reinsure (or cede) the amount of the limits in excess of \$5 million to reinsurers.

Reinsurance's highly refined uses in recent years include applications where reinsurance was used as part of a carefully planned hedge strategy.

Income smoothing

Reinsurance can help to make an insurance company's results more predictable by absorbing larger losses and reducing the amount of capital needed to provide coverage.

Surplus relief

Reinsurance can improve an insurance company's balance sheet by reducing the amount of net liability, and thereby increasing surplus. Surplus, assets less liabilities, is roughly the same as shareholder equity on a balance sheet of a non-insurance company.

Arbitrage

The insurance company may be motivated by arbitrage in purchasing reinsurance coverage at a lower rate than what they believe the cost is for the underlying risk.

Types of Reinsurance

Proportional

Proportional reinsurance (mostly known as quota share reinsurance) is where the reinsurer takes a stated percent share of each policy the insurer writes and then shares in the premiums and losses in that same proportion. The size of the insurer might only allow it to write a risk with a policy limit of up to \$1 million, but by purchasing proportional reinsurance it might double or triple that limit. Premiums and losses are then shared on a *pro rata* basis. For example an insurance company might purchase a 50% quota share treaty; in this case they would share half of all premium and losses with the reinsurer. In a 75% quota share, they would share (cede) 3/4th's of all premiums and losses. The reinsurance company usually pays a commission on the premiums back to the insurer in order to compensate them for costs incurred in sourcing and administering (e.g. retail brokerage, taxes, fees, home office expenses) the business (usually 20-30%) This is known as the ceding commission.

The other (lesser known) form of proportional reinsurance is surplus share. In this case, a "line" is defined as a certain policy limit - say \$100,000. In a 9 line surplus share treaty the reinsurer could then accept up to \$900,000 (9 lines). So if the Insurance Company issues a policy for \$100,000, they would keep all of the premiums and losses from that policy. If they issue a \$200,000 policy, they would give (cede) half of the premiums and losses to the reinsurer (1 line each). If they issue a \$500,000 policy, they would cede 80% of the premiums and losses on that policy to the reinsurer (1 line to the company, 4 lines to the reinsurer $4/5 = 80\%$) If they issue the maximum policy limit of \$1,000,000 the Reinsurer would then get 90% of all of the premiums and losses from that policy.

Non-proportional (excess of loss)

Non-Proportional reinsurance, also known as excess of loss reinsurance, only responds if the loss suffered by the insurer exceeds a certain amount, called the retention. An example of this form of reinsurance is where the insurer is prepared to accept a loss of \$1 million for any loss which may occur and purchases a layer of reinsurance of \$4m in excess of \$1 million - if a loss of \$3 million occurs the insurer pays the \$3 million to the insured(s), and then

recovers \$2 million from their reinsurer(s). In this example, the insurer will retain any loss exceeding \$5 million unless they have purchased a further excess layer (second layer) of say \$10 million excess of \$5 million.

Excess of loss reinsurance can have two forms - "Per Risk" or "Per Occurrence" (Catastrophe or "Cat"). In per risk, the cedant's insurance policy limits are greater than the reinsurance retention. For example, an insurance company might insure commercial property risks with policy limits up to \$10 million and then buy per risk reinsurance of \$5 million in excess of \$5 million. In this case a loss of \$6 million on that policy will result in the recovery of \$1 million from the reinsurer.

In catastrophe excess of loss, the cedant's insurance policy limits must be less than the reinsurance retention. For example, an insurance company issues homeowner's policy limits of up to \$500,000 and then buys catastrophe reinsurance of \$22,000,000 in excess of \$3,000,000. In that case, the insurance company would only recover from reinsurers in the event of multiple losses in one event (i.e hurricane, earthquake, etc.)

This same principle applies to casualty reinsurance except that in the case of Catastrophe excess the word "Clash" is used.

Contracts

Most of the above examples concern reinsurance contracts that cover more than one policy (treaty). Reinsurance can also be purchased on a per policy basis, in which case it is known as facultative reinsurance. Facultative Reinsurance can be written on either a quota share or excess of loss basis. Facultative reinsurance is commonly used for large or unusual risks that do not fit within standard reinsurance treaties due to their exclusions. The term of a facultative agreement coincides with the term of the policy. Facultative reinsurance is usually purchased by the insurance underwriter who underwrote the original insurance policy, whereas treaty reinsurance is typically purchased by a senior executive at the insurance company,

Reinsurance treaties can either be written on a “continuous” or “term” basis. A continuous contract continues indefinitely, but generally has a “notice” period whereby either party can give its intent to cancel or amend the treaty within 90 days. A term agreement has a built-in expiration date. It is common for insurers and reinsurers to have long term relationships that span many years.

Markets

Many reinsurance placements are not placed with a single reinsurer but are shared between a number of reinsurers. (for example a \$30,000,000 xs of \$20,000,000 layer may be shared by 30 reinsurers with a \$1,000,000 participation each) The reinsurer who sets the terms (premium and contract conditions) for the reinsurance contract is called the lead reinsurer; the other companies subscribing to the contract are called following reinsurers (they follow the lead).

About half of all reinsurance is handled by Reinsurance Brokers who then place business with reinsurance companies. The other half is with “Direct Writing” Reinsurers who have their own production staff and thus reinsure insurance companies directly.

Retrocession

Reinsurance companies themselves also purchase reinsurance and this is known as a **retrocession**. They purchase this reinsurance from other reinsurance companies, who are then known as “retrocessionaires.” The reinsurance company that purchases the reinsurance is known as the “retrocedent.”

It is not unusual for a reinsurer to buy reinsurance protection from other reinsurers. For example, a reinsurer which provides proportional, or *pro rata*, reinsurance capacity to insurance companies may wish to protect its own exposure to catastrophes by buying excess of loss protection. Another situation would be that a reinsurer which provides excess of loss reinsurance protection may wish to protect itself against an accumulation of losses in different branches of business which may all become affected by the same catastrophe. This may happen when a windstorm causes damage to property, automobiles, boats, aircraft and loss of life.

This process can sometimes continue until the original reinsurance company unknowingly gets some of its own business (and therefore its own liabilities) back. This is known as a “spiral” and was common in some specialty lines of business such as marine and aviation. Sophisticated reinsurance companies are aware of this danger and through careful underwriting attempt to avoid it.

In the 1980s the [London market](#) was badly affected by the intentional creation of reinsurance spirals, which concentrated risks into the hands of a few reinsurance syndicates. A series of catastrophic losses in the late 1980s, bankrupted these syndicates causing many ceding insurance companies to lose their effective coverage.

It is important to note that the insurance company is obliged to indemnify their policyholder for the loss under the insurance policy whether or not the Reinsurer actually reimburses the Insurer. Many insurance companies have gotten into trouble by purchasing reinsurance from reinsurance companies that did not or could not pay their share of the loss.

In a 50% quota share the insurance company could then be left with half the premium and the entire loss. This is a genuine concern when purchasing reinsurance from a reinsurer that is not domiciled in the same country as the insurer. Remember that losses come after the premium, and for certain lines of casualty business (e.g. asbestos or pollution) the losses can come many, many years later.

See also

- [Catastrophe modeling](#)
- [Financial reinsurance](#)

Return of premium life insurance

Return of premium life insurance is a type of [term life insurance policy](#). The concept is that the policy returns the premiums you have paid for coverage over that fixed term period if coverage is never used. For instance, a \$1 million policy bought for \$50000 over a 30 year period would result in the \$50000 being refunded to the policyholder.

Critics point to the rate of return being less than in a typical investment, as well as the extra cost of the policy compared to basic term life insurance policies. Also, if the policy is cancelled at any time, no money is refunded.

External links

- [Mark Dodge](#): Is "Return of Premium" Life Insurance As Good As It Sounds?

S

[Segregated fund](#) | [Self insurance](#) | [Social insurance](#) |
[Specialty medical peer review](#) | [Subrogation](#) | [Surety bond](#)

Segregated fund

Segregated Funds are a classification of funds administered by an insurance company in the form of individual, variable [life insurance](#) contracts offering certain guarantees to the policyholder such as reimbursement of capital upon death.

As required by law, these funds are fully segregated from the company's general investment funds, hence the eponym.

See also

- [Life insurance](#)
- [Universal life insurance](#)
- [Variable universal life insurance](#)
- [Unitised insurance fund](#)

Self insurance

Self insurance is a risk management method whereby an eligible risk is retained, but a calculated amount of money is set aside to compensate for the potential future loss. The amount is calculated using [actuarial](#) and insurance information and the law of large numbers so that the amount set aside (similar to an [insurance premium](#)) is enough to cover the future uncertain loss. Self insurance is similar to insurance in concept, but involves either the payment of a self-insurance premium to a captive insurance company, cell captive or rent-a-captive insurer, or making an on-balance sheet provision and not paying a premium to an insurer at all.

Self insurance is possible for any [insurable risk](#), meaning a risk that is predictable and measurable enough in the aggregate to be able to estimate the amount that needs to be set aside to pay for future uncertain probable losses. For a risk to be insurable, it must represent a future, uncertain event over which the insured has no control. Other characteristics which assist in making a risk self-insurable include the ability to price or rate the risk. If the insurable event is one in a large number of similar risks, the aggregate risk can be estimated according to the law of large numbers and the probability of that event occurring in the future can be quantified. Normally, catastrophic risks are not self-insured as they are highly unpredictable and high in loss-value. Catastrophic risks are normally underwritten by the re-insurance or wholesale insurance market. Any risk where the potential loss is so large that no one could afford to pay the market premium required to provide cover would not be commercially insurable. An example is that earthquakes cannot be fully insured against because an earthquake can cause more damage than any insurer or the combined insurance market is willing to risk in total assets. However, captives and self-insurance programmes are often designed to provide for a part of a risk that would be catastrophic to the business concerned, or catastrophic risks that are often commercially uninsurable, such as tobacco litigation liability risks. [Reference to follow]

Full or exclusive self-insurance is rare, as a combination of self-insurance and commercial insurance usually provides the best cover for the self-insured. Usually the predictable losses of the risk are retained and self-insured, forming a first or "working" layer of cover, and a stop-loss or stop-gap policy is purchased from the commercial insurance market. The commercial insurance market then pays for losses above the specified self-insurance limit per loss, thereby

stopping the cost of losses to the self-insured above the retained values. Effectively the losses paid for by the insured before the stop-loss policy pays becomes the deductible layer. Depending on the level at which risks are stopped, commercial insurance cover should become less and less expensive the further away the commercial insurer moves from the working layer of paying claims each year.

A popular and cost-effective form of self-insurance can be found in various types of employee benefits insurance offered by corporations with many thousands of employees. Employee benefits self-insurance programmes are often underwritten by captive insurance companies formed, owned and managed by corporations in both on-shore and off-shore captive domiciles. The reason for this is that hundreds of thousands of employees constitute a large enough risk pool for the corporation to be able to predict and price the risk of losses from benefits offered to employees. In this way, corporations are able to manage their financial exposure to the self-insurance programme without buying commercial insurance.

The idea of self insurance is that by retaining, calculating risks, and paying the resulting claims or losses from captive or on-balance sheet financial provisions, the overall process is cheaper than buying commercial insurance from a commercial insurance company. Cost savings to the self-insured entity are usually realised through the elimination of the carrying-costs that commercial insurers are obliged to pass on to their insurance consumers.

Self insurance is less readily available for individuals because individuals rarely gain sufficient cost-savings on small premiums to justify specialised self-insurance captives, interventions and negotiations with insurers. However, many small businesses are now using self-insurance mechanisms such as cell captives and rent-a-captives with considerable success.

See also

- [insurance](#)

Social insurance

Before government-run social insurance programs were enacted, private groups had developed the concept of shared risk. In ancient Greece and Rome there were burial societies to which people contributed regularly to ensure that upon their deaths they would be buried with dignity. Some Medieval guilds had programs under which members contributed to funds which were drawn upon when members were no longer able to work, or died. In more recent times, some fraternal organizations and labor unions had similar programs.

The first state-run social insurance program paying retirement benefits was implemented in Germany in 1889 by Chancellor Otto von Bismarck. Bismarck sought to hold back the historical wave that was building in support of socialism across Europe at the time. His system was funded with payroll taxes paid by the employee and the employer, along with contributions from the government. It also included a disability benefit. Today such programs are common, though not universal, among developed countries. They often include features of the initial German system.

In the United Kingdom the first contributory pension scheme was enacted in 1911, enthusiastically supported by Winston Churchill who described the social insurance principle as "bringing the miracle of averages to the rescue of the millions". Subsequently, the Beveridge Report of 1942 offered the main alternative model. Beveridge attempted to make insurance the basis for a comprehensive, universal scheme covering all the main social needs. President Franklin Roosevelt described the ideal social insurance system as one which provided economic protection "from the cradle to the grave."

Social security is seen as providing assistance to retired workers, often in the form of a superannuation system that provides a pension from a fund to which workers and their employers (and in most countries the government) have contributed throughout their working lives. Workers may also contribute to some form of insurance scheme that provides income and assistance in the event of injury or illness for them and their families. While the scheme may be compulsory, the contributions or historic income often determine the level of support provided, once basic eligibility criteria such as age or inability to work are established. In most of the developed "first world" countries, social security also includes a system of universal health care.

Government pension expenses

- As a % of GDP during 2000 ([\[1\]](#)) ([\[2\]](#))
- Italy 14%
- France 12%
- Germany 12%
- Sweden 9%
- Japan 8%
- USA 4%
- South Korea 2%
- Hong Kong 2%

Specialty medical peer review

Specialty medical peer review is the evaluation of matters that deal with quality of treatment, appropriateness of care, utilization and irregular billing rendered by a physician in a narrow specialty to a patient. The specialty peer review committee can act at the request of a patient, a physician, or a carrier. An [independent review organization] can provide specialty medical reviews for a [wide range of medical specialties](#).

It is the obligation of the peer review committee to conduct unbiased and objective investigations. Specialty peer review panels are often formed by medical associations, insurance companies, health plan carriers or even a state.

Due to the rising cost of healthcare, specialty review committees are emerging as an accepted practice to contain medical costs because of the expertise practicing specialists can provide.

References

[Definition of Specialty Medical Peer Review](#) Specialty Peer review's have become an accepted practice in the medical cost containment industry. There are many cost containment measures available to reduce costs but we believe there is no substitute for the expertise a practicing specialist can provide.

[Specialty Medical Review as Accepted Medical Practice](#) The medical profession should also move to do its own reform. There is no reason why the Medical Council cannot establish a quality assurance body. There is no reason why public hospitals cannot organize specialty peer review groups to analyse data, performance and standards of individual practitioners within that specialty in order to advise the hospital management the competence or otherwise of individual doctors.

[Medical Review Commentary](#)

Subrogation

Subrogation is where one person assumes the legal rights of another person for whom the first person has paid expenses or a debt on their behalf.

Subrogation is best known as a concept of [insurance](#) law. It can be applied outside the law of insurance, although the general laws against maintenance and champerty would otherwise prevent such an arrangement. When an [insurer](#) is required to pay a claimant a sum of money, it is almost always allowed to sue in the name of the claimant against any person who was responsible for the loss. This concept allows an insurance company to sue on behalf of its insured if it is required to pay the insured for a loss caused by another person. However, it also allows an insurance company to recover against its own insured when it is required to pay a third party claimant under the authority of a statute, where otherwise the insured would not be covered for the loss. In most cases, the subrogated claim is fought between two insurance companies disputing who was ultimately responsible for the loss without putting a financial burden on the insured parties.

The other principle area of subrogation law is where payment is made on a guarantee, and the paying party becomes subrogated to the primary debt equal to the amount of the payment that they make. In most legal systems, the paying party is also subrogated to any security which they original creditor held for the debt.

Subrogation can also arise between consenting parties by contract.

However, subrogation is a general principle of law, and could in theory arise in any analogous situation where one party is compelled to discharge the debt or obligation of another.

The party seeking to enforce the rights of another is the *subrogee*. The party whose rights the subrogee is enforcing is the *subrogor*. The subrogee must usually sue the tortfeasor in the name of the subrogor. Standard insurance contracts require the insured to cooperate with their insurer in pursuing subrogation against third parties. If the insured refuses to cooperate, the insurer can sue the insured for breach of contract as well as the third party tortfeasor.

Subrogation in insurance contracts was originally thought to be based on an implied term in the contract of insurance, but in most common law jurisdictions, subrogation is an equitable remedy and is subject to all the usual limitations which apply to equitable remedies.

[1]

Subrogation is generally considered in most legal systems to form

part of the law of restitution by preventing the unjust enrichment, by preventing the subrogor from receiving funds from the subrogee and then still claiming the original sum of money from the tortfeasor/debtor.[\[2\]](#)

Insurance

In insurance there are three general cases:

Subrogation against third party

If, for example, an insured is injured in an assault, the insurer is required to pay out any insurance proceeds occasioned by the assault. However, the insurer is also allowed to sue the tortfeasor who committed the assault even though, because of the [insurance](#), the victim suffered no damages that would allow him to recover against the tortfeasor himself.

Subrogation against insured

Most U.S. states require insurers to cover damages to innocent third parties caused by automobile accidents. For example, if a drunk driver strikes a pedestrian, the pedestrian may recover their damages from the insurer even though it may have been a condition of the policy that the insured not operate a vehicle while impaired, and would not have recovered damages if he had been the only person injured. In such a case, the insurer will be required to pay the pedestrian, but may sue its own insured to recover any money paid to the pedestrian.

Subrogation between insurers

When insured damage is clear, but fault is not, insurers are generally required to pay the proceeds to the insured party even when the right of subrogation is not clear. For example, two adjoining businesses are destroyed by a fire that arose out of negligence, but it is not immediately clear who was to blame. Both parties are entitled to recover from their insurers unless arson or gross negligence can be proved. However, the insurers may still continue to litigate over which party is at fault for the fire, and the successful insurer may recover its pay out from the unsuccessful insurer.

As it is common for [health insurance](#) to cover treatment for any injury, no matter how caused, health insurers often exercise their subrogation rights against persons they believe were responsible for the injury. Not infrequently, insured persons and their legal counsel do not consider the interests of the health insurer when settling

lawsuits against tortfeasors, and in such a case the health insurance company may recover against the insured if a settlement effectively prevents them from recovering against the tortfeasor. However, for persons represented by counsel, this merely pushes the risk of recovery onto the insurers of lawyers.

Guarantees

Subrogation also exists in the law of suretyship: when a surety pays or performs on account of the principal's default, he ordinarily has the right to recover the amount of his payment or the costs of his performance from the principal, even in the absence of an express agreement by the principal to do so.

References

1. ^ *Lord Napier and Ettrick v Hunter* [1993] AC 713, HL
2. ^ Goff & Jones, *The Law of Restitution*, 3rd ed.; Birks, *Introduction to the Law of Restitution*, 2nd ed.

Surety bond

A **surety bond** is a contract among at least three parties: (i) the principal, (ii) the obligee, and (iii) the surety. Through this agreement, the surety agrees to make the obligee whole (usually by payment of money) if the principal defaults in its performance of its promise to the obligee. The contract is formed so as to induce the obligee to contract with the principal, i.e., to demonstrate the credibility of the principal.

Suretyship bonds originated hundreds of years ago as a mechanism through which trade over long distance could be encouraged. They are frequently used in the construction industry: in order to obtain a contract to build the project, the general contractor (and often the sub-contractors as well) must provide the owner a bond for its performance of the terms of the contract. Conversely, owners and contractors may also provide payment bonds to ensure that subcontractors and suppliers are paid for work done. Under the Miller Act, payment and performance bonds are required for general contractors on all U.S. federal government construction projects where the contract price exceeds \$100,000.00.

Surety bonds are also used in other situations, for example, to secure the proper performance of fiduciary duties by persons in positions of private or public trust.

A key term in nearly every surety bond is the *penal sum*. This is a specified amount of money which is the maximum amount that the surety will be required to pay in the event of the principal's default. This allows the surety to assess the risk involved in giving the bond; the premium charged is determined accordingly.

If the principal defaults and the surety turns out to be insolvent, the purpose of the bond is rendered nugatory. Thus, the surety on a bond is usually an [insurance company](#) whose solvency is verified by private audit, governmental regulation, or both.

The principal will pay a premium (usually annually) in exchange for the bonding company's financial strength to extend surety credit. In the event of a claim, the surety will investigate it. If it turns out to be a valid claim, the surety will pay it and then turn to the principal for reimbursement of the amount paid on the claim and any legal fees incurred.

A bail bond is a type of surety bond used to secure the release from custody of a person charged with a criminal offense. Under such a contract, the principal is the accused, the obligee is the government, and the surety is the bail bondsman.

Examples of Surety Bonds:

- Contractor License and Permit
- Court
- Customs
- Lost Securities
- Money Transmitters
- Mortgage brokers
- Motor Vehicle Dealers
- Patient Trust Funds
- Probate
- Public official
- Tax bonds
- Telemarketing
- Subdivision
- Utility deposit
- Wage and Welfare/Fringe Benefit (Union)
- Public Warehouse
- Supply bonds
- Self-Insured Workers compensation
- Insurance Company Qualifying
- Reclamation

Examples of [fidelity bonds](#):

- ERISA
- Business Service Bonds
- Public Official
- Manufacturers
- Small Businesses
- Non-Profit Organizations
- Real Estate Managers
- Title Agents
- Financial institutions
- Precious Metal Exposures
- Armored Car

See also

- [Fidelity Bonds](#)

External links

- [The Banker: Enron fallout: why insurers fail banks - 02 March, 2002](#)
- [What's All the Noise About Surety Bonding?](#)
- [General Surety Bond Information & Current Events](#)

T

Term life insurance | Terrorism insurance |
Theory of Decreasing Responsibility | Third party administrator |
Title insurance | Total permanent disability insurance |
Trade Credit Insurance | Travel insurance | Travelers Insurance

Term life insurance

Term life insurance is the original form of [life insurance](#) and is considered to be pure insurance protection because it builds no cash value. This is in contrast to [permanent life insurance](#) such as [whole life](#), [universal life](#), and [variable universal life](#).

Term life insurance is temporary, as it covers only a specific period of time, the relevant term. If the insured dies during the term, the death benefit will be paid to the beneficiary. Because the term expires the insurer often does not have to pay out making term insurance the most inexpensive way to purchase a substantial death benefit on a coverage per premium dollar basis.

Concepts

Usage

Because term insurance is temporary in nature its primary use is generally to provide for covering temporary financial responsibilities of the insured. Such responsibilities may include but are not limited to consumer debt, dependent care, college education for dependents, and mortgages.

Annual renewable term

The simplest form of term life insurance is for a term of one year. The death benefit would be paid by the insurance company if the insured died during the one year term, while no benefit is paid if the insured dies one day after the last day of the one year term. The premium paid is then just the expected probability of the insured dying in that one year plus a cost and profit component for the insurer. Since the likelihood of dying in the next year is low for anyone that the insurer would accept for the coverage, purchasing one year of coverage is not generally done, nor cost effective. The main problem with this type of coverage is that the insured could acquire a terminal illness within the year, but not die until after the term expires. Because of the terminal illness, the purchaser would likely be uninsurable after the expiration of the initial term, and would be unable to purchase a new policy. A variant that is commonly purchased is *annual renewable term* (ART). In this form, the premium is paid for one year of coverage, but the policy is guaranteed to be able to be continued each year for a given period of years. This period varies from 10 to 30 years, or occasionally until age 95. As the insured ages the premiums increase accordingly and later becomes financially unviable as the rates for a policy would eventually approach the face amount. In this form the premium is slightly higher than for a single year's coverage, but is much more likely for the insured to have the benefit paid.

Level term

Much more common than annual renewable term insurance is insurance where the premium is the same for a given period of years. The most common periods being 10, 15, 20, and 30 years. In this form, the premium paid each year is the same, and is the cost of each year's annual renewable term rates averaged over the term, with a time value of money adjustment made by the insurer. Thus the longer the term the premium is level for, the higher the premium, because the older, more expensive to insure years are averaged into the premium.

Most level term programs include a renewal option and allow the insured to renew for a maximum guaranteed rate if the insured period needs to be extended. This would be used if the health of the insured deteriorates significantly during the term.

Payout likelihood

Term offers coverage will pay a death benefit which is usually income tax free, as long as the policy is in force and premiums are current (Death benefits of both Term and Permanent coverage are usually income tax free).

Insurance industry studies show that it is very unlikely that the death benefit will ever be paid on a term insurance policy. One study placed the percentage as low as 1% of policies paying a benefit. That is the reason term insurance is able to be so inexpensive. The low payout percentage is a combination of there being a low likelihood (in the aggregate) of a random, healthy person dying within a short period of time. Because of this low likelihood of an insurer having to pay a death benefit, term insurance is by far the most inexpensive way to purchase a death benefit on a coverage per premium dollar basis.

Permanent life insurance offers coverage for the entire life of the insured and therefore will pay a death benefit which is usually income tax free, as long as premiums are current or there is enough cash value to cover the premiums in some cases. This high payout likelihood, though, increases the cost per premium dollar substantially. Permanent coverage allows certain tax advantages, including tax deferred growth of cash value. This tax deferred growth is similar to that of a Roth IRA, however, if the policy is canceled any cash value growth above premium payments is taxable.

Conversion privileges

Some people may need to take advantage of the benefits offered by permanent programs, but may not be able to attain the proper coverage or higher premiums, many term policies offer a conversion privilege for a certain period of years, allowing the insured to convert to a permanent policy regardless of health condition at the time of conversion. In this way a person can obtain the necessary coverage for a young family, for instance by purchasing the inexpensive term insurance, but be able to utilize the benefits of a permanent policy as cash flows increase or as coverage needs decrease.

Conversion generally allows the policy holder to convert a term program to a permanent program with an equal or lesser death benefit without proof of insurability.

See also

- [Permanent life insurance](#)
- [Whole life insurance](#)
- [Universal life insurance](#)
- [Variable universal life insurance](#)
- [Buy term and invest the difference](#)

Terrorism insurance

Terrorism insurance is [insurance](#) purchased by property owners to cover their potential losses and liabilities that might occur due to terrorist activities.

It is considered to be a difficult product for insurance companies, as the odds of terrorist attacks are very difficult to predict and the potential liability enormous. For example the September 11, 2001 attacks resulted in an estimated \$31.7 billion loss. This combination of uncertainty and potentially huge losses makes the setting of [premiums](#) a difficult matter. Most insurance companies therefore exclude terrorism from coverage in [Casualty](#) and [Property insurance](#), or else require endorsements to provide coverage. A risk manager looking for terrorism coverage is going to be facing quite a search. Some commercial insurers are offering terrorism insurance, despite the lack of a federal terrorism backstop and inaccurate techniques for modeling the risk. In general, the policies are restrictive and limited to a select few policyholders. Insurers are being very selective about who they underwrite and have only a very limited capacity to write this coverage, especially since no backstop has yet been approved in Washington. In fact, the majority of the insurance market isn't offering coverage. According to a recent study by both the Independent Insurance Agents of America (IIAA) and the Alliance of American Insurers (AAI). According to a study conducted in February of 2002 eighty percent of insurance companies have excluded or have indicated that they will exclude terrorism from commercial policies.

Some of the language on the terrorism policies tends to be somewhat overly restrictive. For example, things like riot and vandalism would be covered, but if someone does it for a political cause they would not be covered. The pricing of the product, since early December, has moderated drastically. Some of the underwriters are willing to offer more reasonable terms. The quotes that have been seen earlier were in the area of half of one percent to five percent rate online. If you're buying \$10 million in limit, it was costing you somewhat in the range of \$50,000 to \$500,000. Recently, that range has moderated from two-tenths of one percent to 2 and half percent. The price of the policy really depends on where the clients are residing and how much limit they buy.

Industry Needs

Airlines and high-profile properties are paying large exorbitant sums for their terrorism insurance policies. The airline industry, specifically, is struggling to meet the \$750 million in coverage that the government requires. Concentration of risk is another factor in determining availability for terrorism insurance. Due to the concentrated losses of the World Trade Center, carriers were hit with massive losses in one centralized location. In the past if you had a fire on a block with 10 insureds, all 10 insureds might not be lost in that fire. With terrorism, you realize that in a two-block area, you could lose all 10 insureds at the same time.

Modeling the Risks

In a report issued in March 2002, Swiss Re officials speculate that it could take three to five years for the private insurance industry to develop the means to cover terrorism. Insurance companies are using an approach that is similar to that used with natural catastrophe risks. The Swiss Re report suggested that in this case where demand is greater than the supply for terrorism coverage that a short-term solution is possible: a mix of government and private resource to make easy the transition. In this situation, the government would serve two functions: to establish rules to overcome the capacity shortage and to be the insurer of last resort.

Crisis Management

Crisis management planning can save large amounts money in the long run. According to experts, for every dollar spent on developing crisis management plan a head of time, \$7 is saved in losses when a disaster comes.

Netherlands

Insurance payments related to terrorism are restricted to a billion euro per year for all insurance companies together. This regards property insurance, but also life insurance, medical insurance, etc.

US

On November 26, 2002 President George W. Bush signed into law the Terrorism Risk Insurance Act (TRIA) which created a federal backstop for insurance claims related to acts of terrorism. The Terrorism Risk Insurance Act is intended as a temporary measure to allow time for the insurance industry to develop their own solutions and products to insure against acts of terrorism. The Act is set to expire December 31, 2005.

Iraq

The New York Times reports that in Baghdad you can now buy terrorism insurance. One company offers such insurance for \$90, and if the customer is a victim of terrorism in the next year, it pays the heirs \$3,500.

External links

- [Catastrophes](#) from the Insurance Information Institute (Scroll down half way to see a break down of 9/11 losses)
- [Why governments have to be the insurer of the last resort](#)
- [Terrorism Insurance: Where's the coverage?](#)
- [America Needs Terrorism Insurance](#)

Theory of Decreasing Responsibility

The **Theory of Decreasing Responsibility** is an insurance sales philosophy promoted by Primerica relating to [term life insurance](#). Their philosophy is that insurance should be purchased with the theory in mind. The theory assumes that the financial responsibilities of the insured are temporary and insurance should be purchased to offset those responsibilities. These responsibilities include paying consumer debts, mortgages, funding children's education and income replacement.

With a proper plan, the theory holds that each of these responsibilities is temporary. A person can pay off their debt and mortgage, owning their home outright. Children do grow up and leave home becoming independent of their parents support. And using concepts like [buy term and invest the difference](#) a person should become financially independent having accumulated enough wealth to retire and no longer need to work. At this point the insured could self-insure and discontinue the life insurance program.

The theory also assumes that having investments on hand that produce income, and/or can be converted to cash is preferable to having insurance with a monthly premium. As an example \$1,000,000 worth of investments or even just cash in a savings account is preferable to \$1,000,000 worth of insurance.

The theory holds that with a proper plan the need for life insurance is obviated. The only challenge in this approach is that the insured must take responsibility and consciously plan to become financially independent. If they do not, or are not able, they may not have the assets they need to self insure.

External links

- [The Theory of Decreasing Responsibility](#) Primerica.com

Third party administrator

Third party administrator (TPA) is an organization that processes health care claims without carrying [insurance](#) risk. Third party administrators are prominent players in the managed care industry and have the expertise and capability to administer all or a portion of the claims process. They are normally contracted by a health insurer or self-insuring companies to administer services, including claims administration, premium collection, enrollment and other administrative activities.

Self-insured employers often contract with third party administrator to handle their insurance functions. Insurance companies oftentimes outsource the claims, [utilization review](#) or membership functions to a TPA. Sometimes TPAs only manage provider networks, only claims or only [utilization review](#).

While some third-party administrators may operate as units of insurance companies, they are often independent. However, hospitals or provider organizations desiring to set up their own health plans will often outsource certain responsibilities to TPAs.

References

- [Healthcare Crisis Glossary](#)
- [The Hartford Group Benefits Glossary](#)
- [Plexis Online Resources](#)
- [Why Third Party Administrators \(TPA's\) use Independent Review Organizations \(IROs\)](#)

External Links

- [Statutory Definition](#)
- [TPA Reference Page](#)

Title insurance

Title insurance is [insurance](#) against loss from defects in title to real property and from the invalidity or unenforceability of mortgage liens. It is available in many countries but it is principally a product developed and sold in the United States. It is meant to protect an owner's or lender's financial interest in real property against loss due to title defects, liens or other matters. It will defend against a lawsuit attacking the title as it is insured, or reimburse the insured for the actual monetary loss incurred, up to the dollar amount of insurance provided by the policy.

Typically the real property interests insured are fee simple ownership or a mortgage. However, title insurance can be purchased to insure any interest in real property, including an easement, lease or life estate. Just as lenders require [fire insurance](#) and other types of insurance coverage to protect their investment, nearly all institutional lenders also require title insurance to protect their interest in the collateral of loans secured by real estate. Some mortgage lenders, especially non-institutional lenders, may not require title insurance.

The following focuses on title insurance as issued in the United States.

Why Title Insurance Exists in the United States

Title insurance exists in the US in great part because of a comparative deficiency in the US land records laws. Most of the industrialized world uses land registration systems for the transfer of land titles or interests in them. Under these systems, the government makes the determination of title ownership and encumbrances on the title based on the registration of the instruments transferring or otherwise affecting the title in the applicable government office. With only a few exceptions, the government's determination is conclusive. Governmental errors lead to monetary compensation to the person damaged by the error but that aggrieved party usually cannot recover the property.

A few jurisdictions in the United States have adopted a form of this system, e.g., Minneapolis Minnesota and Boston Massachusetts. However, for the most part, the states have opted for a system of document recording in which no governmental official makes any determination of who owns the title or whether the instruments transferring it are valid. The reason for this is probably that it is much less expensive to operate than a land registration system; it doesn't require the number of legally skilled employees that the registration systems do.

Greatly simplified, in the recording system, each time a land title transaction takes place, the transfer instrument is recorded with a local government recorder located in the jurisdiction (usually the county) where the land lies. The instrument is then indexed by the names of the grantor (transferor) and the grantee (transferee) and photographed so it can be found and examined by anyone who wants to see it. Usually, the failure by the grantee to record the transfer instrument voids it as to subsequent purchasers of the property who don't actually know of its existence.

Under this system, determining who owns the title requires the examination of the indexes in the recorders' offices pursuant to various rules established by state legislatures and courts, scrutinizing the instruments to which they refer and making the determination of how they affect the title under applicable law. (The final arbiters of title matters are the courts, that make decisions in suits brought by parties having disagreements.) Initially, this was done by hiring an abstractor to search for the documents affecting the land in question and an attorney to opine on their meaning under the law, and this is still done in some places. However, this procedure has been found to

be cumbersome and inefficient in most of the US. Substantial errors made by the abstractor or the attorney will be compensated only to the limit of the financial responsibility of these parties (including their liability insurance). The opinions given by attorneys as to each title are not uniform and often require time consuming analysis to determine their meanings.

Title insurers utilize this recording system to produce an insurance policy for any purchaser of land, or interest in it, or mortgage lender if the premium is paid. Title insurers use their employees or agents to perform the necessary searches of the recorders' offices records and to make the determinations of who owns the title and to what interests it is subject. The policies are fairly uniform (a fact that greatly pleases lenders and others in the real estate business) and the insurers carry, at a minimum, the financial reserves required by insurance regulation to compensate their insureds for valid claims they make under the policies. This is especially important in large commercial real estate transactions where many millions of dollars are invested or loaned in reliance on the validity of real estate titles. As stated above, the policies also require the insurers to pay for the costs of defense of their insureds in legal contests over what they have insured. Abstractors and attorneys have no such obligation.

Comparison with other insurance

Title insurance differs in several respects from other types of [insurance](#). Where most insurance is a contract where the insurer [indemnifies](#) or guarantees another party against a possible specific type of loss (such as an accident or death) at a future date, title insurance generally insures against losses caused by title problems that have their source in past events. This often results in the curing of title defects or the elimination of adverse interests from the title before a transaction takes place. Title insurance companies attempt to achieve this by searching public records to develop and document the chain of title and to detect known claims against or defects in the title to the subject property. If liens or encumbrances are found, the insurer may require that steps be taken to eliminate them (for example, obtaining a release of an old mortgage or deed of trust that has been paid off, or requiring the payoff) before issuing the title policy. In the alternative, it may "except" those items not eliminated from coverage. Title plants are sometimes maintained to index the public records geographically, with the goal of increasing searching efficiency and reducing claims.

The explanation above discloses another difference between title insurance and other types: title insurance premiums are not principally calculated on the basis of [actuarial science](#), as is true in most other types of insurance. Instead of correlating the probability of losses with their projected costs, title insurance seeks to eliminate the source of the losses through the use of the recording system and other underwriting practices. As a result, a relatively small fraction of title insurance premiums are used to pay insured losses. The great majority of the premiums are used to finance the title research on each piece of property and to maintain the title plants used to efficiently do that research. There is significant social utility in this approach as the result conforms with the expectations of most property purchasers and mortgage lenders. Generally, they want the real estate they purchased or loaned money on to have the title condition they expected when they entered the transaction, rather than money compensation and litigation over unexpected defects.

Types of policies

Standardized forms of title insurance exist for owners and lenders. The lender's policies include a form specifically for construction loans, though this is today little used.

Owner's policy

The owner's policy insures a purchaser that the title to the property is free from defects (liens and encumbrances), except those which are listed as exceptions in the policy. It covers losses and damages suffered if the title is unmarketable (i.e., if the title can not be legally sold and conveyed to another party or if the property is "unmarketable"), for example if an interest in the property is found to belong to someone else, if there is no access to the land (if this coverage is provided), or if there is some other defect on the title. An owner's policy specifically lists what interest in the property is insured as of what effective date. The policy also contains various standard exclusions to coverage and also specific exceptions to coverage, based on documents that have been recorded against the property at some point in the past, that the title company is unwilling to insure.

The policy limits of the owner's policy is typically the purchase price paid for the property. As with other types of insurance, coverages can also be added or deleted with an endorsement. There are many forms of standard endorsements to cover a variety of common issues. The premium for the policy may be paid by the seller or buyer as the parties agree; usually there is a custom in a particular state or county which is reflected in most local real estate contracts. Consumers should inquire about the cost of title insurance before signing a real estate contract which provide that they pay for title charges. A real estate attorney, broker, escrow officer (in the western states), or loan officer can provide detailed information to the consumer as to the price of title search and insurance before the real estate contract is signed. Title insurance coverage lasts as long as the insured retains an interest in the land insured and typically no additional premium is paid after the policy is issued.

Lender's policy

This is sometimes called a loan policy and it is issued only to mortgage lenders. Generally speaking, it follows the assignment of the

mortgage loan, meaning that the policy benefits the purchaser of the loan if the loan is sold. For this reason, these policies greatly facilitate the sale of mortgages into the secondary market. That market is made up of high volume purchasers such as Fannie Mae and the Federal Home Loan Mortgage Corporation as well as private institutions.

The American Land Title Association ("ALTA") forms are almost universally used in the country though they have been modified in some states. In general, the basic elements of insurance they provide to the lender cover losses from the following matters:

1. The title to the property on which the mortgage is being made is either

- Not in the mortgage loan borrower,
- Subject to defects, liens or encumbrances, or
- Unmarketable.

2. There is no right of access to the land.

3. The lien created by the mortgage:

- is invalid or unenforceable,
- is not prior to any other lien existing on the property on the date the policy is written, or
- is subject to mechanic's liens under certain circumstances.

As with all of the ALTA forms, the policy also covers the cost of defending insured matters against attack.

Elements 1 and 2 are important to the lender because they cover its expectations of the title it will receive if it must foreclose its mortgage. Element 3 covers matters that will interfere with its foreclosure.

Of course, all of the policies except or exclude certain matters and are subject to various conditions.

There are also ALTA mortgage policies covering single or one-to-four family housing mortgages. These cover the elements of loss listed above plus others. Examples of the other coverages are loss from forged releases of the mortgage and loss resulting from encroachments of improvements on adjoining land onto the mortgaged property when the improvements are constructed after the loan is made.

Construction loan policy

In many states, separate policies exist for construction loans.

Land title associations

In the United States, the American Land Title Association (ALTA) is a national trade association of title insurers. ALTA has created standard forms of title insurance policy "jackets" (standard terms and conditions) for Owner's, Lender's and Construction Loan policies. ALTA forms are used in most, but not all, U.S. states. ALTA also offers special endorsement forms for the various policies; endorsements amend and typically broaden the coverage given under a basic title insurance policy. ALTA does not issue title insurance; they provide the policy forms that title insurers issue.

Some states, including Texas and New York, may mandate the use of forms of title insurance policy jackets and endorsements approved by the state insurance commissioner for properties located in those jurisdictions, but these forms are usually similar or identical to ALTA forms.

While title insurance generally insures owners and lenders against things that have occurred in the past, in some limited circumstances, in some states, coverage is available for certain events that can occur after a title insurance policy is issued. Most notably, coverage is now available that includes the risk that a third party may place a forged mortgage or deed of trust against a property after the owner's policy has been issued. This coverage is included in the "Homeowners Policy of Title Insurance" (a specific policy form), published by ALTA and the California Land Title Association (CLTA). Note that this is not the same as a so-called CLTA Standard Policy, which provides much less coverage than the Homeowners Policy of Title Insurance.

Industry profitability

The title insurance industry is a profitable one. In 2003, according to ALTA, the industry paid out about \$662 million in claims, about 4.3% percent of the \$15.7 billion taken in as premiums. By comparison, the boiler insurance industry, which like title insurance requires an emphasis on inspections and risk analysis, pays 25% of its premiums in claims.

Comparing claims with premiums tells only part of the story, since, for example, title insurance companies have marketing expenses not incurred by the boiler insurance industry. But the industry's profitability is also hinted at by the repeated instances of state regulators uncovering cases where title insurers have engaged in illegal marketing tactics. Although owners are free to shop around for title insurance, many owners defer such decisions to lenders or real estate agents, and title insurance companies have sometimes used illegal tactics in marketing to those decision-makers. Illegal tactics noted in a CNN/*Money* article include kickbacks, free vacations, and the free use of office space and equipment. The article noted that in 2005 alone over a dozen title insurers settled with regulators for tens of millions of dollars over these practices.

Further evidence of the industry's profitability can be found by comparing the title insurance costs in the 49 states where such insurance is issued with the costs associated with the state-run Title Guaranty Program in Iowa, where title insurance is illegal. The program is run by the Iowa Finance Authority. It costs \$110 for up to \$500,000 in coverage in the state; after adding costs for the services of an abstractor (who does the research on the property) and the legal fees, such a title guaranty costs about \$400.00, versus the \$1,100.00 paid for that same home in other states (based on figures cited by the Iowa Bar Association).

External links

- [Iowa Finance Authority](#)
- [Title insurance: Getting ripped off?](#), a January 2006 CNN/*Money* article
- [The Title Report](#)

Total permanent disability insurance

Total Permanent Disability (TPD) is a phrase used in the [insurance](#) industry. Generally speaking it means that because of a sickness or injury a person is unable to work in their own or any occupation for which they are suited by training, education or experience. An individual or group of individuals can insure themselves against it, often times as part of a life insurance package or sometimes separately.

Insurance companies often have slightly different definitions of what determines permanent disability, however typical definitions would include:

- Loss of two of: eyes, arms or legs.
- Absence from work for six months due to an accident or illness, without expectation of returning to work.

TPD differs from income protection insurance in that the insured person must be permanently disabled for the insurer to pay out, rather than just absent from work for an extended period of time.

Trade Credit Insurance

Trade Credit Insurance is an [insurance](#) policy that protects a company's commercial accounts receivable from loss due to non-payment or insolvency by the debtor.

History

Trade Credit Insurance was born at the end of nineteenth century, but it was mostly developed in Western Europe between the first and Second World Wars. Several companies were founded in every country, some of them also managed the political risk to export on behalf of their State.

Credit Insurance is a term used to describe both Trade Credit Insurance and Credit Life Insurance.

Trade Credit Insurance should not be confused with Credit Life Insurance which is a consumer purchase.

Over the '90s, a concentration of the Trade Credit Insurance market took place and three big companies became the main players of a market focused on Western Europe:

- Euler Hermes, merger of the two credit insurance companies of the Allianz Group.
- Atradius.
- Coface. Formerly a French government sponsored institution established in 1946, this company has been privatised and now operates in more than 58 countries around the world. In addition to trade credit insurance, Coface provides business information products, debt collections services and trade finance solutions. Global web site www.coface.com; USA web site www.coface-usa.com

External links

- [COFACE](#) official website
- [COFACE NORTH AMERICA](#) official website

See also

- [Insurance](#)

Travel insurance

Travel insurance, also see [Travelers Insurance](#), is purchased by travelers to cover unforeseen health/medical problems while outside the scope of their personal insurance coverage.

Most travel insurance coverages are found in one or more of four general types of policies:

Package: the most popular type of travel insurance. Package plans are designed specifically for a single trip. They are ideal for cruises, tours, air trips, vacation home rentals, whether foreign, domestic, or for leisure or business travel.

This type of plan is pre-bundled by the insurance company and provides a wide range of travel coverage such as:

trip cancellation, trip interruption, travel delay, baggage and personal effects, baggage delay, emergency evacuation, travelers assistance and medical expense.

In addition, some plans may include, or offer as an option, Accidental Death, Flight Accidental Death, and Rental Car coverage.

This type of insurance is usually rated based on 3 factors:

your age today; the cost of your trip; and, the length of your trip.

Medical: travel plans are specifically designed to provide medical coverage while you are on your trip. Many group and individual health insurance plans either don't cover you outside your coverage area or will restrict coverage to emergencies only. We strongly recommend that you call your health insurance provider to determine what you will be covered for before deciding on the amount of coverage to buy.

Flight Accidental Death: travel plans that include a limited form of Accidental Death coverage providing protection while you are boarding, alighting from, or riding as a passenger on a scheduled flight of an airline. Some plans include coverage as part of a package of insurance and others offer it as an option. Coverage is available up to \$1,000,000.

Medical Evacuation/Repatriation: travel plans that either include or have been specifically designed for medical evacuation/repatriation coverage. This coverage is designed to evacuate a seriously ill or injured client to the nearest medical facility and, in some cases, then

back home.

External links

- [What Tour Operators and Adventure Travelers Need to Know About Travel “Risk Mitigation” Insurance](#)
- [Insurance industry statistics in the U.S.](#)
- [Travel Dictionary & Review](#)

Travelers Insurance

Introduction

Since 1687 when Edward Lloyd opened an English coffee house (creatively named Lloyd's of London) and began brokering insurance to merchants importing goods from the American colonies, people have purchased insurance to protect themselves from risk. In post-9/11 America, no insurance sector has experienced greater popularity than travel insurance. Prior to the attacks on the World Trade Center, fewer than 10% of Americans purchased travel insurance. Today, by some estimates, over 30% purchase a risk mitigation product prior to departure. The question is: despite their growing popularity, how good are these products at protecting us from the risks we face when traveling?^[1] Given the remote locations frequented by adventure travelers and the sometime risky activities they participate in, this question is particularly relevant for adventure travelers and tour operators alike.

To Risk or not to risk

Travelers face a myriad of risks, from annoyances such as lost baggage and cancelled trips, to catastrophic events such as terrorist attacks, motor vehicle accidents and exposure to unfamiliar viruses and bacteria. Although many of us are irritated by “non-critical” events like missing luggage or a cancelled trip, studies suggest that Americans are overwhelmingly concerned about protecting themselves from catastrophic risk. A recent survey by a major insurer indicated that the greatest fear of 74% of American travelers is a medical incident while traveling. An overwhelming 92% would like to have immediate access to U.S. quality medical care and the option to be transported home to receive treatment.² These concerns are legitimate, since according to the Merck Manual, nearly 1 in 30 will require some type of emergency care while traveling and medical evacuations can cost over \$200,000.³ It would seem that travel insurance is a good alternative for protecting travelers from risk. But is it?

What is Travel Insurance

Despite their names, the actual benefits of travel insurance are anything but obvious. In its basic form, travel insurance is designed to protect the traveler from the economic impact of unforeseen expenses incurred while traveling. This means that emergency hospital bills, lost luggage and possibly even a medical evacuation will be reimbursed if receipts are submitted. However, what most travelers don't realize is that travel insurance is secondary (subrogated, in insurance parlance) to other insurance they might already have. For instance, if you receive emergency medical treatment in developing country and that care is covered by your health insurance (most American health insurers cover emergency medical care overseas), your health insurer pays, not the travel insurance company. If your health insurance specifically excludes treatment outside the U.S. or you don't have health insurance, purchasing travel insurance is a must.

The Limitations of Travel Insurance

So why buy travel insurance if you already have health insurance? If you've read your health insurance policy and know you are covered abroad, maybe you shouldn't. However, what if you don't want to be treated by the locals and want to be transported home? Health insurance almost never provides reimbursement for medical evacuations. What if you need to speak with a physician who is knowledgeable regarding a specific medical condition? Insurers don't employ doctors either. While travel insurers like to advertise large numbers for medical evacuation coverage (\$1,000,000+ is common) and emergency "hotlines" to render assistance, you should carefully examine the policy to determine what is actually being offered. Unfortunately, insurers are simply not set up to provide good emergency services. Though their brochures may lead you to believe otherwise, they don't employ doctors, don't have relationships with hospitals (other than for billing and reimbursement) and don't have the ability to actually send someone to help you. The best among them have some local relationships with emergency services providers to whom they can refer you. According to a study by Robert Grace, M.D., an Australian doctor living in the South Pacific, the worst fail to answer the phones of their 24 hour hotlines.⁴ The majority of insurers outsource these services to companies beyond their direct control. Many of them are located overseas, beyond the reach of the U.S. legal system.

Perhaps worst of all, the \$1,000,000 of coverage you purchased won't actually bring you home. Why not? If you read your policy carefully, you'll notice there are clauses regarding "appropriateness" and "adequacy" that allow insurers to leave you wherever you are, if they determine the facility is "adequate" to provide care. Unfortunately, an insurer located on the other side of the world is often ill equipped to determine whether any particular hospital is capable of providing "adequate" care. Furthermore, the insurer is often slow to act and even slower to approve transport.

While some have had positive experiences with insurers, a survey of news articles and court filings reveals a disturbing number of those who did not. Rebecca Orozco, a graduate student studying in Spain, was a victim of the "appropriateness" clause. After being struck by a car while crossing the street, Rebecca was taken to a Spanish hospital where the doctor informed her she had a broken pelvis, a broken back and a shattered left elbow. The attending physician recommended that she be transported very quickly back to the United States. At first her

insurer refused. Rebecca said, "When called upon, the insurance company dropped the ball. They were definitely out of their league when handling a situation of this nature. The business personnel in charge of my case only looked at the money involved and did not want to bring me home for that reason alone. Finances were their top priority and my well-being was second." Rebecca was only transported back to the U.S. after her "parents had made every connection they could (friends, lawyers, state senators, and finally the Secretary of State of California)." Because of the delay, "a portion of [her] shattered elbow bone was dead by the time [she] finally got back to Fresno for the surgery. It is currently held in place now by a metal rod that will remain for the rest of [her] life unless the dead bone piece deteriorates."[\[2\]](#) While Rebecca Orozco eventually was transported, Hung Duong, a Lucent engineer, was not so lucky. After developing a cardiac problem in Saudi Arabia, Duong contacted his employer, insurer and an assistance company to evacuate him, but they refused citing that care at the local hospital was "adequate." In fact, the hospital was not "adequate" and assigned a Saudi physician who had never operated on a condition of Duong's type before. Tragically (but not unpredictably), Duong did not survive the surgery.[\[3\]](#)

If you are lucky enough to be transported, you almost never go home. This is where the "nearest appropriate care" clause is activated. In the aftermath of the Asian Tsunami, Bangkok was a popular (and much less expensive) destination for insurers to bring injured Americans for treatment. While you may be transported to a decent facility, it is just as likely that you end up in an "appropriate" facility like the one that greeted tourist Roy Morris in India where "there was half an inch of urine on the floor; flies and roaches were everywhere. There was no medical equipment of any kind."[\[4\]](#) How can insurers get away with this kind of behavior? This is a good question the federal government should be asking.

Why is access to U.S. quality medical care so important? The answer is simple: it puts the odds in your favor for a positive outcome. Recent studies by the European Heart Journal and the British Journal of Surgery show that even in Western Europe, surgical mortality is almost 20% higher than it is in the U.S. This figure rises to nearly 30% in Eastern Europe and to over 70% in Latin America (for the rest of the world, there is no data). If you want the best possible medical outcome, no country compares to the U.S.[\[5\]](#), [\[6\]](#) Perhaps Consumer Reports stated it best in a December 2005 report which recommends that travelers "read the fine print carefully, particularly on two points: evacuations and exclusions." This is essential because the insurer, not the patient, will "decide whether you need to be evacuated and where you'll be sent." [\[7\]](#) If you don't have decent health insurance or are

worried about the cost of replacing lost luggage or a cancelled flight, then travel insurance is a good alternative. If you're primarily concerned with access to medical resources and transportation in an emergency, there are better options than travel insurance.

Another Option: The creation of Travel Assistance Companies

The late 1980's saw the birth of a new type of risk mitigation company: the travel assistance provider. Recognizing that "insurance" and "service" rarely belong together in the same sentence, travel assistance was created to provide improved service to travelers. Travel assistance is different from insurance. Its purpose is to provide travelers with the critical services and resources they need in an emergency. The theory goes something like this: if you have a problem anywhere in the world, the travel assistance company is available to help you obtain essential medical, security and other services. Most travel assistance also provides economic protection for an aeromedical evacuation (they pay, you don't). Travel assistance is great in concept, but how is it in practice?

Pricing pressure and commodity products

Unfortunately, travel assistance companies find themselves selling services that are difficult to differentiate from those sold by insurers, even though insurers have a reprehensible track record delivering those services. Insurance is a commodity. Service, especially when it is for medical or security purposes, is not. However, the marketing campaigns of insurers make it nearly impossible for the consumer to differentiate between them. To compete with the low prices offered by insurers, many assistance companies have been forced to reduce their prices so significantly that they are unable to provide the services that most of us would want.

They also have instituted rules and exclusions that mirror those sold in insurance products. So where does this leave the intrepid traveler still trying to buy a lifeline in a time of need?

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3. ^ United States Court of Appeals for the Ninth Circuit, Nga Bui, as Personal Representative of the Estate of Hung M. Duong, Deceased, Plaintiff-Appellant, v. American Telephone & Telegraph Company Incorporated, a New York corporation; Lucent Technologies, Inc., a Delaware corporation; International SOS Assistance, Inc., a Delaware Corporation, Defendants-Appellees, November 15, 2002.
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7. ^ “Traveling Healthy Overseas,” Consumer Reports, December 2005, www.consumerreports.org

External links

[Global Rescue - A better option than travel insurance](#)

U

Uberrima fides | Underwriting profit |
Unincorporated reciprocal inter-insurance exchange |
Uninsured motorist clause | Universal life insurance |
Utilization management | Utilization review | Unitised insurance fund

Uberrima fides

Uberrima fides is a Latin phrase meaning "utmost good faith" (or translated literally, "most abundant faith"). It is name of a legal doctrine which governs insurance contracts. This means that all parties to an insurance contract must deal in good faith, making a full declaration of all material facts in the insurance proposal. This contrasts with the legal doctrine of caveat emptor (let the buyer beware).

Thus the assured must reveal the exact nature and potential of the risks that he transfers to the insurer, while at the same time the insurer must make sure that the potential contract fits the needs of, and benefits, the assured.

External links

- [Uberrima Fides And Concealment in the Marine Policy Application](#) from the Maritime Law Association of the United States

Underwriting profit

Underwriting profit is a term used in the [insurance](#) industry. It consists of the earned premium remaining after losses have been paid and administrative expenses have been deducted. It does not include any investment income earned on held premiums.

It has also been very illusive to most insurance companies (like the unicorn or Loch Ness Monster). Many companies will eschew Underwriting profit in order to gain a greater market share.

Unincorporated reciprocal inter-insurance exchange

An **unincorporated reciprocal inter-insurance exchange** (sometimes abbreviated **URIE**), is an insurance company referred to in United States state legislation as either a reciprocal [insurance exchange](#), a reciprocal interinsurance exchange, or perhaps most properly a reciprocal inter-insurance exchange and is managed by an attorney in fact (AIF) for the unincorporated reciprocal inter-insurance exchange.

URIE's are often confused with an incorporated [mutual insurance company](#). Dennis Reinmuth compares URIE's to a limited liability company (LLC) and even a limited partnership (LP). Both the URIE and the LLC are made up of members. Members enter into a direct partnership with most of the features associated with a mutual agency. As is also true in the case of the LLC, there is no incorporated limited liability entity owned by shareholders. Share ownership and limited liability evidenced by stock certificates are issued to each owner in proportion to his ownership.

A members of an URIE may be either a natural person, a LLC or LP, a partnership, or a corporation. In some states, municipalities form URIEs to [indemnification|cross-indemnify](#) towns, cities, villages, and counties.

The AIF is a stakeholder and a trustee who holds the deposits made by each member. All property entrusted to the AIF in a URIE remains, at all times, the property of the subscribers. In that regard, the AIF is a classic trustee, and the members are the beneficiaries of the trust.

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- *USAA: life story of a business cooperative*, by Edward Clare Dunn (ISBN 070182809).

Uninsured motorist clause

Definition

An '**Uninsured Motorist Clause**' is a provision commonly found in United States automobile [insurance](#) policies that provides for a driver to receive damages for any injury they receive from an uninsured, negligent driver. The owner of the policy pays a premium to the insurance company to include this clause. In the event of a qualifying accident, the insurance company pays the difference between what the uninsured driver can pay and what the injured driver is entitled to.

It is mandatory to have this sort of insurance in some States, such as Illinois, Maryland, and New York.

Who is as an uninsured motorist for the purpose of an uninsured motorist clause?

The first category of persons who may trigger an uninsured motorist provision consists of individuals who do not have liability coverage for the vehicle he or she is operating. In most states, it is a crime to be uninsured in this manner.

The next category consists of hit and run drivers. When an individual flees the scene of an accident without leaving sufficient information to identify his or herself, the individual is considered uninsured for the purposes of an uninsured motorist provision. Note, however, that a positive ID of the license plates in a hit and run accident will often be considered by insurance companies sufficient information to identify the negligent hit and run driver. Such identification will often lead to the denial of an uninsured motorist claim, as insurance companies will often litigate the claim, bringing in the registered owner of the vehicle with matching plates, even where that person denies involvement in the accident.

Litigating an uninsured motorist claim

Most states require that you sue the uninsured motorist (or a fictitious John Doe hit and run driver when litigating the second category of uninsured motorist claim) for your injuries in order to prevail on a breach of contract action against your insurance carrier. Some states such as Virginia require that you actually obtain a judgment against the uninsured motorist (while serving your uninsured motorist carrier in the lawsuit so that your carrier can defend the suit) and then demand payment from the uninsured motorist carrier prior to suing your carrier for any breach of an uninsured motorist provision. Normally there is no need to sue the carrier in such states as Virginia unless there is a dispute as to the amount of coverage. The insurance company will ordinarily pay the judgment, up to your policy limits, once a court determines that an uninsured motorist was at fault.

Typically, the correct venue to file an uninsured motorist action is either in the jurisdiction where the accident occurred OR the jurisdiction where the contract was breached.

Universal life insurance

Universal Life (UL) is a type of permanent [life insurance](#) based on a cash value. That is, the policy is established with the insurer where premium payments above the cost of insurance are credited to the cash value. The cash value is credited each month with interest, and the policy is debited each month by a cost of insurance (COI) charge, which is drawn from the cash value if no premium payment is made that month. The interest credited to the account is determined by the insurer; often it is pegged to a financial index. Because only the amount of interest credited and not the cash value itself varies, UL policies offer a stable investment option. A similar type of policy that was developed from universal life policies is the [variable universal life insurance](#) policy, or VUL. VUL's allow the cash value to be directed to a number of separate accounts that operate like mutual funds and can be invested in stock or bond investments with greater risk and potential reward. Additionally, there is the recent addition of Equity Indexed Universal Life contracts that invest in Options on the movement of an Index such as the S&P 500, Russell 2000, and the Dow (to name a few). These type of contracts only participate in the movement of Index and not the actual purchase of stocks, bonds or mutual funds. They have a Cap as to the maximum amount they will credit interest to and a minimum guarantee which keeps the principle of the contract from losing money in a down year. Typically each year the starting point is last year's ending point which means that: (1) the policy amount is locked end at the end of the year; and, (2) the beginning value from which the movement is measured is reset.

Universal life is similar in some ways to, and was developed from [whole life insurance](#). The potential advantage of the universal life policy is in its flexibility and the potential for greater cash value growth if the interest rates offered outperform the insurer's general account (that whole life policy cash value growth is based on). Universal life is more flexible than whole life in two primary ways: the death benefit and usually the premium payment are flexible. The death benefit can be increased (subject to insurability) and decreased without surrendering the policy or getting a new one as would be required with whole life. Also a range of premium payments can be made to the policy, from a minimum amount to cover various guarantees the policy may offer to the maximum amount allowed by IRS rules. The primary difference is that the universal life policy shifts some of the risk for maintaining the death benefit to the insured. In a whole life policy, as long as every premium payment is made, the

death benefit is guaranteed to be paid if the insured dies. In a UL the policy will lapse (the death benefit will no longer be in force) if the cash value or premium payments are not enough to cover the cost of insurance. To make their policies more attractive insurers often add guarantees, where if certain premium payments are made for a given period, the policy will remain in force even if the cash value drops to zero.

There are two other area's which differentiate Universal Life from Whole Life Insurance. The first is that the expenses, charges and cost of insurance within a Universal Life contract are transparently disclosed to the insured, whereas a Whole Life Insurance policy has traditionally hidden this type of information from the policyholder. Secondly, there are more flexible exit strategies within a Universal Life contract which increases the flexibility of that contract over a Whole Life policy including Zero interest or wash loans which virtually provide the policyholder the ability to access the growth inside the contract "income tax free."

Uses

Universal Life is used as a tax-advantaged way to purchase life insurance. In the early years of the contract, the premium far exceeds the cost of insurance (COI) charges. The difference between the two (the "inside build-up") will grow tax-deferred so long as the policy remains in force. If the policy is held until death, this inside build-up will escape taxation entirely. Policyholders may also be able to access the inside build-up via a policy loan without incurring it as taxable income.

Types

Single Premium

Single Premium UL is paid for by a single, substantial, initial payment. The policy remains in force so long as the COI charges have not depleted the account.

Fixed Premium

Fixed Premium UL is paid for by periodic premium payments. Generally these payments will be for a shorter period of time than the policy is in force; for example payments may be made for 10 years, with the intention that thereafter the policy is paid-up. If the experience of the plan is not as good as predicted, the account value at the end of the premium period may not be adequate to continue the policy as originally written. In this case, the policyholder may have the choice to either: 1. Leave the policy alone, and let it potentially expire early (if COI charges deplete the account), or 2. Make additional or higher premium payments, to keep the death benefit level, or 3. Lower the death benefit.

Flexible Premium

Flexible Premium UL allows the policyholder to determine how much they wish to pay each time premium is due. In addition, Flexible Premium UL offers two different death benefit options: 1. A level death benefit (often called *Option A*), or 2. A level amount at risk (often called *Option B*). This is also referred to as an increasing death benefit.

Policyholders frequently buy Flexible Premium UL with a large initial deposit, thereafter making payments irregularly.

See also

- [life insurance](#)

Utilization management

Utilization management is the evaluation of the appropriateness, medical need and efficiency of health care services procedures and facilities according to established criteria or guidelines and under the provisions of an applicable health benefits plan. Typically it includes new activities or decisions based upon the analysis of a case.

Utilization management describes proactive procedures, including discharge planning, concurrent planning, pre-certification and clinical case appeals. It also covers proactive processes, such as concurrent clinical reviews and peer reviews, as well as appeals introduced by the provider, payer or patient.

As pre-certification and concurrent review of cases grew, utilization management spun out of [utilization review](#).

While not synonymous, health care professionals tend to use the terms as interchangeable. The difference is utilization management is forward looking and intends to manage health care cases efficiently and cost effectively before and during health care administration. [Utilization review](#) is more backward looking considering whether health care was appropriately applied after it was administered.

References

- [Glossary of Terms in Managed Health Care](#)
- [Health Terms and Definitions](#)
- [Independent Medical Reviews For Different Types of Organizations](#)
- [Understand the nuances of utilization review and utilization mangement](#)

Utilization review

Utilization Review is considered to be the review of how certain medical services are requested and performed. The review typically involved pre-review, or pre-authorization; concurrent review, or inpatient evaluation of care and needs; and retrospective review, or the larger historical picture of how physicians, labs, or hospitals handle their patient populations.

Most HMOs have written standards for what items are reviewed, and what might be considered appropriate for amount, time, and sources of evaluation and treatment. An [Independent review organization](#) will also perform utilization review functions.

References

- Understand the nuances of utilization review and utilization management
- Medical Case Management Best Practices

Unitised insurance fund

Unitised insurance funds are a form of collective investment offered through [life assurance](#) policies.

Mainly found in the UK and British Isles offshore jurisdictions, both single premium and regular premium policies offer access to wide range and types of assets for all types of investors.

Nature of funds

The funds are open-ended investments made available through life assurance companies. Unlike most collective investments there is no independent body tasked with safeguarding the assets. The company may manage, promote and hold the assets on behalf of the policyholders. The policyholders have rights to the assets but do not own the units, nor are they readily redeemable.

This said, in practise life companies tend to be well regulated and depend on their reputation which ensures consumer confidence when investing.

External links

- The [FSA](#) regulates [life assurance](#) companies in the UK.

V

Value of In-Force | Variable universal life insurance |
Vehicle insurance | Viatical settlement | Vision insurance

Value of In-Force

Value of In-Force is a [life insurance](#) term for the present value of the profits that will emerge from a block of life insurance policies over time.

Variable universal life insurance

Variable Universal Life Insurance (often shortened to VUL) is a type of [life insurance](#), that builds a cash value. In a VUL, the cash value can be invested in a wide variety of separate accounts, similar to mutual funds, and the choice of which of the available separate accounts to use is entirely up to the contract owner. The 'variable' component in the name refers to this ability to invest in volatile investments similar to mutual funds. The 'universal' component in the name is a bit of a misnomer that is used to refer to the flexibility the owner has in making premium payments. The premiums can vary from nothing in a given month up to maximums defined by the IRS code for life insurance. This flexibility is in contrast to [whole life insurance](#) that has fixed premium payments that typically cannot be missed without lapsing the policy.

Variable universal life is also considered to a type of [permanent life insurance](#), because the death benefit will be paid if the insured dies any time up until the endowment age (typically 100) as long as there is sufficient cash value to pay the costs of insurance in the policy.

Uses

Variable universal life insurance receives special tax advantages in the United States IRS code. The cash value in life insurance is able to earn investment returns without incurring current income tax as long as it meets the definition of life insurance and the policy remains in force. The tax free investment returns could be considered to be used to pay for the costs of insurance inside the policy. See the 'Tax Benefits' section for more.

In one theory of life insurance, needs based analysis, life insurance is only needed to the extent that assets left behind by a person will not be enough to meet the income and capital needs of his or her dependents. In one form of variable universal life insurance, the cost of insurance purchased is based only on the difference between the death benefit and the cash value (defined as the net amount at risk from the perspective of the insurer). Therefore, the greater the cash value accumulation, the lesser the net amount at risk, and the less insurance that is purchased.

Another use of Variable Universal Life Insurance is among relatively wealthy persons who give money yearly to their children to put into VUL policies under the gift tax exemption. Very often persons in the United States with a net worth high enough that they will encounter the estate tax give money away to their children to protect that money being taxed. Often this is done within a VUL policy because this allows a tax deferral (for which no alternative would exist besides tuition money saved in an educational IRA or 529 plan), provides for permanent life insurance, and can usually be accessed by borrowing against the policy.

Contract Features

By allowing the contract owner to choose the investments inside the policy, the insured takes on the investment risk, and receives the greater potential return of the investments in return. If the investment returns are very poor this could lead to a policy lapsing (ceasing to exist as a valid policy). To avoid this, many insurers offer guaranteed death benefits up to a certain age as long as a given minimum premium is paid.

Premium Flexibility

VUL policies have a great deal of flexibility in choosing how much premiums to pay for a given death benefit. The minimum premium is primarily affected by the contract features offered by the insurer. To maintain a death benefit guarantee, that specified premium level must be paid every month. To keep the policy in force, typically no premium needs to be paid as long as there is enough cash value in the policy to pay that month's cost of insurance. The maximum premium amounts are heavily influenced by the IRS code for life insurance. The IRS code section 7701 sets limits for how much cash value can be allowed and how much premium can be paid (both in a given year, and over certain periods of time) for a given death benefit. The most efficient policy in terms of cash value growth would have the maximum premium paid for the minimum death benefit. Then the costs of insurance would have the minimum negative effect on the growth of the cash value. In the extreme would be a life insurance policy that had no life insurance component, and was entirely cash value. If it received favorable tax treatment as a life insurance policy it would be the perfect tax shelter, pure investment returns and no insurance cost. In fact when variable universal life policies first became available in 1986, contract owners were able to make very high investments into their policies and received extraordinary tax benefits. In order to curb this practice, but still encourage life insurance purchase, the IRS developed guidelines regarding allowed premiums for a given death benefit.

Maximum Premiums

The standard set was twofold: to define a maximum amount of cash value per death benefit and to define a maximum premium for a given death benefit. If the maximum premium is exceeded the policy no longer qualifies for all of the benefits of a life insurance contract and is instead known as a modified endowment contract or a MEC. A MEC still receives tax free investment returns, and a tax free death benefit, but withdrawals of cash value in a MEC are on a 'lifo' basis, where earnings are withdrawn first and taxed as ordinary income. If the cash value in a contract exceeds the specified percentage of death benefit, the policy no longer qualifies as life insurance at all and all investment earnings become immediately taxable in the year the specified percentage is exceeded. In order to avoid this, contracts define the death benefit to be the higher of the original death benefit

or the amount needed to meet IRS guidelines. The maximum cash value is determined to be a certain percentage of the death benefit. The percentage ranges from 30% or so for young insureds, declining to 0% for those reaching age 100.

The maximum premiums are set by the IRS guidelines such that the premiums paid within a seven year period after a qualifying event (such as purchase or death benefit increase), grown at a 6% rate, and using the maximum guaranteed costs of insurance in the policy contract, would endow the policy at age 100 (ie the cash value would equal the death benefit). More specific rules are adjusted for premiums that are not paid in equal amounts over a seven year period. The entire maximum premium (greater than the 7 year premium) can be paid in one year and no more premiums can be paid unless the death benefit is increased. Because the 7 year level guideline premium was exceeded the policy becomes a MEC.

To add more confusion the 7 year MEC premium level cannot be paid in a VUL every year for 7 years, and still avoid MEC status. The MEC premium level can only be paid in practice for about 4 years before additional premiums cannot be paid if non MEC status is desired. There is another premium designed to be the maximum premium that can be paid every year a policy is in force. This premium carries different names from different insurers, one calling it the guideline maximum premium. This is the premium that often reaches the most efficient use of the policy.

Investment Choices

The number and type of choices available is dependent on the insurer, but some policies are available with a wide variety of separate accounts, also known as sub-accounts. Some insurers offer over 50 separate accounts with investment styles from very conservative guaranteed fixed accounts, to bond funds, to equity funds to highly aggressive sector funds.

Separate accounts are organized as trusts to be managed for the benefit of the insureds, and are named because they are kept separate from the general account which is the other reserve assets of the insurer. They are treated, and in all intents and purposes are, very much like mutual funds, but have slightly different regulatory requirements.

Tax Advantages

- Tax free investment earnings while a policy is in force
- FIFO withdrawal status after 10 years
- Tax free policy loans from non-MEC policies
- The death benefit is paid income tax free if premiums are paid with after tax dollars

Taxes are the main reason those in higher tax brackets (25%+) would desire to use a VUL over any other accumulation strategy. For someone in a 35% tax bracket, the investment return on the sub-accounts may average 10%, and at say age 75 the policy's death benefit would have an internal rate of return of 8.5%. In order to get an 8.5% rate of return in an ordinary taxable account, in a 35% tax bracket, one must earn 13.1%. Compared to a Roth IRA, one would get the 10% tax free. But the limits on the Roth are low, and the Roth is unavailable to those in the 35% tax bracket. The break-even point may be for someone in a 15% tax bracket, where if he maxed out his Roth contribution, then in a taxable account earning 10%, after tax he would have 8.5%, equal to the IRR on the VUL. These numbers assume expenses that may vary from company to company, and it is assumed that the VUL is funded with a minimum face value for the level of premium. If an individual is unable to max fund the VUL, it may easily be more preferred to use term insurance until able to convert to VUL.

The cash values would also be available to fund lifestyle or personally managed investments on a tax free basis in the form of refunds of premiums paid in and policy loans (which would be paid off on death by the death benefit.)

Criticisms of Variable Universal Life

Some general Criticisms

- High Costs - VUL's tend to be more expensive than other types of insurance, including Whole Life, Term, and Universal Life (in that order). The total cost of insurance in a VUL policy will be greater over its lifetime than a term policy and therefore more profitable to the insurer (see [Buy term and invest the difference](#)). Tax savings however may more than compensate for the costs, assuming the individual has already taken advantage of Roth contributions.
- Limited investment choices, confined to the (sometimes expensive) separate accounts that are run or set up by the insurance company.
- Policy expenses may increase if the company has negative experience with mortality. Usually there is a cap on those expenses. It should not be assumed that the policy will continue to grow and stay robust, particularly if subjected to withdrawals and loans.

Many criticisms of VUL policies are not about the product in and of itself, but rather how it is sold by many insurance agents (This section may be considered biased, as it does not address the product, but rather attacks the individuals marketing the product, known as an ad hominem attack, and a logical fallacy.)

- VUL is more profitable to the insurance company and to the agent which creates a perverse incentive to sell it when term life insurance would be better for the customer.
- Policy purchasers may not be aware of the investment risk involved. This is, however, a clear violation of basic NASD rules, and is a fineable (at the minimum) offense for the agent.
- In order to emphasize the tax free savings aspect of VUL, many agents do not disclose the other tax free savings options open to people, such as Roth IRAs or section 529 plans, which might be better. Also other tax advantaged savings options such as the 401(k) or other pre-tax retirement plans may be more appropriate in a given situation. There are agents promoting

themselves primarily as "investment consultants" and who primarily market the policies as "tax free savings" instead of "life insurance with an accumulation benefit", which is illegal. Prudential Insurance was fined heavily for this practice.

- Some insurance companies or agents do not actively encourage the maximum efficient use of the policy by paying the greatest possible premium. Thus cash values do not grow well and costs are maximized.
- While certain Universal Life insurance fees are scrupulously disclosed, there are some who claim that certain additional investment account management fees (MERs) are not fully disclosed in some VUL policy projections. These additional fees can potentially cut the net yield of a VUL policy by a significant margin, compared to the identical investments held outside the VUL.
- It is also important to note that some financial professionals, mostly those who work for wire houses (such as Smith Barney, Merrill Lynch, etc.), try to dissuade clients overall from purchasing permanent life insurance as an investment vehicle over their own mutual funds, stocks or bonds.

External links

- http://216.239.39.104/search?q=cache:F9o_exbzWHwJ:invest-faq.com/articles/ins-vul.html+variable+universal+life&hl=en&lr=&ie=UTF-8&strip=1
google's cache of the full invest-faq article.
- <http://ul.blows.2y.net>
A quite mathematically detailed and negative critique of Canadian Universal Life Insurance programs

Vehicle insurance

Vehicle insurance (or **Auto insurance**, **car insurance**, **motor insurance**) is [insurance](#) consumers can purchase for cars, trucks, and other vehicles. Its primary use is to provide protection against losses incurred as a result of traffic accidents.

Coverage levels

Insurance can cover some or all of the following items:

1. The insured party
2. The insured vehicle
3. Third parties

Different policies specify the circumstances under which each item is covered. For example, a vehicle can be insured against theft, fire damage, or accident damage independently.

Public policy

In many countries it is compulsory to purchase auto insurance before driving on public roads. In the United States, penalties for not purchasing auto insurance vary by state, but often involve a substantial fine, license and/or registration suspension or revocation, as well as possible jail time in some states. Usually the minimum required by law is third party insurance to protect third parties against the financial consequences of loss, damage or injury caused by a vehicle. Typically, coverage against loss of or damage to the driver's own vehicle is optional - one notable exception to this is in Saskatchewan, where SGI provides collision coverage (less a \$700 deductible) as part of its basic insurance policy. In South Australia Third Party Personal insurance from the State Government Insurance Corporation (SGIC) is included in the license registration fee. South Africa allocates a percentage of the money from petrol into the Road Accidents Fund, which goes towards compensating third parties in accidents.[1] Most countries relate insurance to both the car and the driver, however the degree of each varies greatly.

Basis of premium charges

Depending on the jurisdiction, the insurance premium can be either mandated by the government or determined by the insurance company in accordance to a framework of regulations set by the government. Often, the insurer will have more freedom to set the price on physical damage coverages than on mandatory liability coverages.

When the premium is not mandated by the government, it is usually derived from the calculations of an [actuary](#) based on statistical data. The premium can vary depending on many factors that are believed to have an impact on the expected cost of future claims.[2] Those factors can include the car characteristics, the coverage selected ([deductible](#), limit, covered perils), the profile of the driver (age, gender, driving history) and the usage of the car (commute to work or not, predicted annual distance driven).[3][4]

Gender

Several insurance companies offer a lower premium to female operators as a proxy odometer for lower average mileage. However, most adult rates are unisex.

Distance

Some car insurance plans do not differentiate in regard to how much the car is used. However, methods of differentiation would include:

Reasonable estimation

Several car insurance plans rely on a reasonable estimation of the average annual distance expected to be driven which is provided by the insured. This discount benefits drivers who drive their cars infrequently but has no actuarial value since it is unverified.

Odometer-based systems

Cents Per Mile Now[5](1986) advocates classified odometer-mile rates. After the company's risk factors have been applied and the customer has accepted the per-mile rate offered, customers buy

prepaid miles of insurance protection as needed, like buying gallons of gasoline. Insurance automatically ends when the odometer limit (recorded on the car's insurance ID card) is reached unless more miles are bought. Customers keep track of miles on their own odometer to know when to buy more. The company does no after-the-fact billing of the customer, and the customer doesn't have to estimate a "future annual mileage" figure for the company to obtain a discount. In the event of a traffic stop, an officer could easily verify that the insurance is current by comparing the figure on the insurance card to that on the odometer.

Critics point out the possibility of cheating the system by odometer tampering. Although the newer electronic odometers are difficult to roll back, they can still be defeated by disconnecting the odometer wires and reconnecting them later. However, as the Cents Per Mile Now website points out: "As a practical matter, resetting odometers requires equipment plus expertise that makes stealing insurance risky and uneconomical. For example, in order to steal 20,000 miles of continuous protection while paying for only the 2,000 miles from 35,000 miles to 37,000 miles on the odometer, the resetting would have to be done at least nine times to keep the odometer reading within the narrow 2,000-mile covered range. There are also powerful legal deterrents to this way of stealing insurance protection. Odometers have always served as the measuring device for resale value, rental and leasing charges, warranty limits, mechanical breakdown insurance, and cents-per-mile tax deductions or reimbursements for business or government travel. Odometer tampering—detected during claim processing—voids the insurance and, under decades-old state and federal law, is punishable by heavy fines and jail."

Under the cents-per-mile system, rewards for driving less are delivered automatically without need for administratively cumbersome and costly technology. Uniform per-mile exposure measurement for the first time provides the basis for statistically valid rate classes. Insurer premium income automatically keeps pace with increases or decreases in driving activity, cutting back on resulting insurer demand for rate increases and preventing today's windfalls to insurers when decreased driving activity lowers costs but not premiums.

GPS-based system

In 1998, Progressive Insurance started a pilot program in Texas in which volunteers installed a GPS-based technology called Autograph in exchange for a discount. The device tracked their driving behavior

and reported the results via cellular phone to the company.[6] Policyholders were reportedly more upset about having to pay for the expensive device than they were over privacy concerns.[7]

In 1996, Progressive filed for and obtained a US patent (US patent 5,797,134) on their process. Progressive has also filed corresponding patent applications in Europe and Japan. UK auto insurer, Norwich Union, has obtained an exclusive license to Progressive's European patent application. They have recently completed a successful pilot test of the technology and it is now available commercially under the tradename "Pay As You Drive™"[8]

OBDII-based system

In 2004, Progressive launched another pilot program to allow policyholders to earn a discount on their premiums by consenting to use its TripSense device. TripSense connects to a car's OnBoard Diagnostic(OBD-II) port, which exists in all cars built after 1996. The discount is forfeited if the device is disconnected for a significant amount of time.[9]

Auto Insurance in the United States

Coverage Available

The consumer may be protected with different coverage types depending on what coverage the insured purchases.^[10]

In the United States, liability insurance covers claims against the policy holder and generally, any other operator of the insured's vehicle, provided they do not live at the same address as the policy holder and are not specifically excluded on the policy. In the case of those living at the same address, they must specifically be covered on the policy. Thus it is necessary for example, when a family member comes of driving age they must be added on to the policy. Liability insurance generally does not protect the policy holder if they operate any vehicles other than their own. When you drive a vehicle owned by another party, you are covered under that party's policy. Non-owners policies may be offered that would cover an insured on any vehicle they drive. This coverage is available only to those who do not own their own vehicle and is sometimes required by the government for drivers who have previously been found at fault in an accident.

Generally, liability coverage does extend when you rent a car. However, in most cases only liability applies. Any additional coverage, such as comprehensive policies, i.e. "full coverage" may not apply. Full coverage premiums are based on, among other factors, the value of the insured's vehicle. This coverage *may* not apply to rental cars because the insurance company does not want to assume responsibility for a claim greater than the value of the insured's vehicle, assuming that a rental car may be worth more than the insured's vehicle. Most rental car companies offer insurance to cover damage to the rental vehicle. These policies may be unnecessary for many customers as credit card companies, such as Visa and MasterCard, now provide supplemental collision damage coverage to rental cars if the transaction is processed using one of their cards. These benefits are restrictive in terms of the types of vehicles covered.^[11]

Liability

Liability coverage provides a fixed dollar amount of coverage for damages that an insured becomes legally liable to pay due to an accident or other negligence. For example, if an insured drives into a telephone pole and damages the pole, liability coverage pays for the

damage to the pole. In this example, the insured also may become liable for other expenses related to damaging the telephone pole, such as loss of service claims (by the telephone company).

Liability coverage is available either as a combined single limit policy or as a split limit policy:

Combined Single Limit

A combined single limit combines property damage liability coverage and bodily injury coverage under one single combined limit. For example, an insured with a combine single liability limit strikes another vehicle and injures the driver and the passenger. Payments for the damages to the other driver's car, as well as payments for injury claims for the driver and passenger, would be paid out under this same coverage.

Split Limits

A split limit liability coverage policy splits the coverages into property damage coverage and bodily injury coverage. In the example given above, payments for the other driver's vehicle would be paid out under property damage coverage, and payments for the injuries would be paid out under bodily injury coverage.

Note that bodily injury liability coverage is also usually split as well into a maximum payment per person and a maximum payment per accident.

Collision

Collision coverage provides coverage for an insured's vehicle that is involved in an accident, subject to a deductible. This coverage is designed to provide payments to repair the damaged vehicle, or payment of the cash value of the vehicle if it is not repairable.

Comprehensive

Comprehensive coverage provides coverage, subject to a deductible, for an insured's vehicle that is damaged by incidents that are not accidents. For example, theft or attempted theft, vandalism, weather, or impacts with animals.

Uninsured/Underinsured Coverage

Uninsured/Underinsured coverage, also known as UM/UIM, provides coverage if another at-fault party either does not have insurance, or does not have enough insurance. In effect, your insurance company acts as at fault party's insurance company.

In the United States, the definition of an uninsured/underinsured motorist, and corresponding coverages, are set by the state you reside in.

Loss of Use

Loss of Use coverage, also known as rental coverage, provides reimbursement for rental expenses associated with having an insured vehicle repaired.

Loan/Lease Payoff

Loan/Lease Payoff coverage, also known as GAP coverage or GAP insurance, [12] was established in the early 1980's to provide protection to consumers based upon buying and market trends.

Due to the sharp decline in value immediately following purchase, there is generally a period in which the remaining car payments exceed the compensation the insurer will pay for a "totaled" (destroyed, or written-off) vehicle. The escalating price of cars, extended term auto loans, and the increasing popularity of leasing gave birth to GAP protection. GAP waivers provide protection for consumers when a "gap" exists between the actual value of their vehicle and the amount of money owed to the bank or leasing company.

Car Towing Insurance

Car towing insurance is a misnomer. It provides road-side assistance (usually in the form of a tow) for drivers who run out of gas, have a mechanical breakdown, or flats. Note that most insurance companies cover towing costs for a non-driveable covered vehicle involved in an accident under collision coverage.

United Kingdom Laws regarding motor insurance

In 1930 the UK government introduced a law that required every person who used a vehicle on the road to have at least third party personal injury insurance. Today UK law is defined by the The Road Traffic Act which was last modified in 1991.

The Act requires all motorists to be insured against their liability for injuries to others (including passengers) and for damage to other persons property resulting from use of a vehicle on a public road or in other public places. This is called Third Party Insurance. It is an offence to drive your car, or allow others to drive it, without at least Third Party insurance.

The insurance certificate or cover note issued by the insurance company constitutes legal evidence that the vehicle specified on the document is indeed insured. The Law says that an authorised person, such as the police, may require a driver to produce an insurance certificate for inspection. If the driver cannot show the document immediately on request, then the driver will usually be issued a HORT/1 with seven days, as of midnight of the date of issue, to take a valid insurance certificate (and usually other driving documents as well) to a police station of the driver's choice. Failure to produce an insurance certificate is an offence.

Insurance is more expensive in Northern Ireland than in other parts of the UK.

Motorists in the UK are required to display a Vehicle excise duty disc in their car when it is kept or driven on public roads. This helps to ensure that most people have adequate insurance on their vehicles because you are required to produce an insurance certificate when you purchase the disc. However it is a known practice for some people to purchase insurance to gain the certificate and then to cancel the insurance and gain a full refund within the statutory 14 day cooling off period.

Automobile/Motor Insurance in other countries

The **Insurance Services Network** provides a listing of countries and their corresponding coverage requirements. [Country Insurance Information](#)

See also

- [Alcohol exclusion laws](#)
- [Extended coverage](#)
- [No fault insurance](#)

Sources

- [Cents Per Mile Now](#), 2004.
- [New technology provides detailed info on driving habits](#), by Tom Scheck, Minnesota Public Radio, August 23, 2004.

Viatical settlement

A **viatical settlement** is the sale of a **life insurance policy** by the **policy** owner, before the policy matures. Such a sale, at a price discounted from the face amount of the policy but usually in excess of the premiums paid or current cash surrender value, provides the seller an immediate cash settlement. Generally, viatical settlements involve insured individuals with a life expectancy of less than two years. Some people are also familiar with life settlements, which are similar transactions but involve insureds with longer life expectancies (two to fifteen years).

A viatical settlement can be an innovative wealth and estate planning tool under the right circumstances. It also essentially creates an open market for redemption of a policy. For example, if the only place you could sell your Ford Motor Company stock was to Ford you would not get that much for it. The same applies to the value of an insurance policy. As long as life insurance has been around, the only place to redeem your policy was from the issuer. Now, much to the chagrin of the life insurance industry, there is an open market to determine a policy's value.

From the perspective of the investor, purchasing a viatical settlement is similar to buying a bond with a negative coupon and an uncertain redemption date. The return depends on the seller's life expectancy and when he or she dies.

Viatical settlements grew in popularity in the United States in the late 1980s, when the AIDS epidemic first hit. The early victims of AIDS in the U.S. were largely gay men, many of whom were not particularly old. They often had no wives or children (the traditional dependents in a life insurance policy), but they had life insurance policies through employment or due to other investment activity. The dependents on the policies were often their parents who did not need the money. Viatical settlements offered a way to extract value from the policy while the policyholder was still alive.

At the time, the AIDS mortality rate was very high, and life expectancy after diagnosis was typically short. Investors were reasonably sure that they would collect in a relatively short time. This combination of events caused a surge in viatical settlements as both investors and viators saw an opportunity for mutual benefit.

Viatical settlements eventually developed a bad reputation in the investing community. The companies that purchased them from policy holders typically resold them to individual investors. Salesmen were paid large commissions to push the settlements, which were not

conventional investments and which were misunderstood by many investors. The government regulatory agencies had little experience and few regulations dealing with viatical settlements, and the industry attracted some unscrupulous dealers.

Despite the bad experience of some investors, viatical settlements remain an often valuable tool for the personal financial management of many ill people. A 2002 study showed that among hospice financial counselors who have had experience with viatical settlements, most report positive experiences.

External links

- [Securities and Exchange Commission's webpage on viatical settlements](#)
- [Viatical and Life Settlements Association of America \(VLSAA\)](#)

Vision insurance

Vision insurance is a form of [insurance](#) that provides coverage for the services rendered by an eye care professional such as an optometrist. There are many forms of vision insurance with the most widely known method being the Vision Service Plan (VSP). The typical vision insurance plan provides yearly coverage for eye exams and partial compensation for eyeglasses, sunglasses and contact lenses.

W

Whole life insurance | With-profits policy

Whole life insurance

Whole life insurance requires a level premium for life, and guarantees a minimum cash value growth included in the [policy](#).

Types

There are two general types of whole life policies: non participating policies (non par), and participating policies.

Non Participating

All values related to the policy (death benefits, cash surrender values, premiums) are determined at policy issue, for the life of the contract, and cannot be altered after issue.

This means that the insurance company assumes all risk of future performance versus the actuaries' estimates. If future claims are underestimated, the insurance company makes up the difference. On the other hand, if the actuaries' estimates on future death claims are high, the insurance company will retain the difference.

Participating

With a participating policy, the insurance company shares the excess profits (dividends) with the policyholder. The greater the success of the companies performance, the greater the dividend.

Requirements

Whole life insurance typically requires that the owner pay premiums for the life of the policy. There are some arrangements that let the policy be "paid up", which means that no further payments are ever required, in as few as 5 years, or with even a single large premium. Typically if the payor doesn't make a large premium payment at the outset of the life insurance contract, then he is not allowed to begin making them later in the contract life. In contrast, [Universal life insurance](#) generally allows more flexibility in premium payment.

Guarantees

The company generally will guarantee that the policy's cash values will increase regardless of the performance of the company or its experience with death claims (again compared to [universal life insurance](#) and [variable universal life insurance](#) which can increase the costs and decrease the cash values of the policy.)

Liquidity

Cash values are considered liquid enough to be used for investment capital, but only if the owner is financially healthy enough to continue making premium payments. Cash value access is tax free up to the point of total premiums paid, and the rest may be accessed tax free in the form of policy loans. If the policy lapses, taxes would be due on outstanding loans.

Performance

Internal rates of return for participating policies may be much better than universal life and interest sensitive whole life because their cash values are invested in the money market and bonds, while par whole life cash values are invested in the life insurance company and its general account, which may be in real estate and the stock market. [Variable universal life insurance](#) may outperform whole life because the owner can direct investments in sub-accounts that may do better. If an owner desires a conservative position for his cash values, par whole life is indicated.

Summary

The primary advantages of whole life are guaranteed death benefit, guaranteed [cash values](#), fixed and known annual premiums, access to cash values, and the fact that mortality and expense charges will not reduce the cash value shown in the policy. The primary disadvantages of whole life are premium inflexibility, and the internal rate of return in the policy may not be competitive with other savings alternatives on a tax free basis.

See also

- [Life insurance](#)

With-profits policy

A **with-profits policy** is an **insurance contract** that participates in the profits of a life **insurance** company.

With-profits policies evolved over many years as a means to achieve long-term capital growth. Today they are accepted as a form of long-term collective investment whereby the investor chooses the insurance company based on factors such as: financial strength, historic returns and the terms of the contracts offered.

The premiums paid by with-profits, without-profits and non-profit policyholders are pooled within the insurance company's **life fund**. The company uses the pooled assets to pay out claims and other settlements. A large part of the life fund is invested in equities, bonds, property and more complex financial instruments to achieve capital growth.

The insurance company aims to distribute part of their profit to the with-profits policy holders in the form of a bonus attached to their policy (see the bonus section below). The bonus rate is determined by complex actuarial calculations with reference to the return on the underlying assets, the level of bonuses declared in previous years and other actuarial assumptions (especially future liabilities and anticipated investment returns).

Types of policy

There are two main categories of with-profits policies:

- **Single premium contracts** - **insurance bonds** (with-profit bonds), single premium endowments, single premium pension policies.
- **Regular premium contracts** - **endowment policies**, whole of life assurance, regular contribution pension policies.

Conventional and unitised

Conventional with-profits contracts have a **basic sum assured** that has bonuses attached. The basic sum assured is the amount of life assurance payable on death; for endowment contracts it is also the minimum lump sum payable at maturity.

The basic sum assured attracts reversionary bonuses which are added to reflect the increase in profit of the policy. Once a reversionary bonus is added it cannot be removed from the policy. For policies with a maturity date the required premiums must have been maintained to receive payment of the basic sum assured and bonuses. If the premiums have not been maintained a reduced amount will be paid. For insurance bonds the basic sum assured plus bonuses represents the plan value. When the policy matures a discretionary terminal bonus may be added.

Unitised with-profits policies work in a similar way except the policy value is represented by units. Various models have been adopted by different insurers, but typically either:

1. the fund value is represented by the bid value of units which increase with time *or*
2. the number of units increase each year to represent the increase in value and the unit price remains fixed.

Endowments still retain a basic sum assured (in most cases) although this may be notional rather than a structural part of the policy.

Unitised with-profits policies were introduced as a response to competition from unit-linked life policies that became available in the 1970's. There never was a clear consumer advantage in with-profits policies being unitised rather than conventional.

The conventional policies have an element of guarantee conferred

by the contractual nature of their basic sum assured. This guaranteed element which is non profit related has caused issues for insurers in the realistic reporting regime (see below). Most policies issued today are unitised and often represent ring fenced trenches of the life fund rather than participating in the full profit of the life company.

Smoothing

With-profits funds work by the concept of **smoothing**. This is when a proportion of the money gained during good performance years is held back to ensure that a reasonable return is paid back during years of poor performance. This allows for a smoothed effect to the increase of the unit price rather than the fluctuations that would normally occur in the daily price for other stocks or shares.

Types of bonus

A **reversionary bonus** (or **annual bonus**) is paid at the end of each year. The annual bonus may consist of two parts. The **guaranteed bonus** is an amount normally expressed as a monetary amount per £1,000 sum assured. It is set at the outset of the policy and usually cannot be varied. The rest of the annual bonus will depend on the investment return achieved by the fund subject to smoothing.

The **terminal bonus** is paid at the maturity and sometimes the surrender of the policy. It is sometimes referred to as the **final bonus**. The terminal bonus represents the member's entitlement to a proportion of the fund that has been held back for the purpose of smoothing. In certain circumstances a Market Value Adjustor may be applied to limit this to the member's fair share.

The insurance company is usually free to decide what mix of bonuses to pay. An insurance company may decide to pay low annual bonuses and a high terminal bonus. Such a policy will protect the insurance company from falls in the investment markets because annual bonuses cannot be taken away once given. However, this policy might be unattractive to investors because it does not contain many guarantees and offers a low rate of return (until the maturity of the policy).

Occasionally an insurer may decide to pay an **interim** or **exceptional bonus** possibly due to restructuring of the company or exceptional investment returns. This is almost unheard of these days.

Market Value Reduction (MVR)

A **Market Value Reduction** is a mechanism used by the insurance company to ensure policy withdrawals represent their fair entitlement to the assets of the life fund. During extended periods of poor investment performance the value of the withdrawal is *reduced*, at an actuarially calculated rate, to reflect the reduction in the underlying value of the assets of the life fund.

The overall purpose is to protect the interests of policyholders who remain invested when the market is performing poorly. By using this contractual clause the insurance company restricts (non-contractual) withdrawals that would otherwise in effect reduce the value of the remaining policies.

- As a simplified example, imagine a fund of £10,000 with 5 investors each with rights to £2,000.
- Let's assume the underlying assets fell in value to £8,000 and one investor decided to surrender their policy.
- If the insurer paid out £2,000 (the notional value), then the policyholder would receive more than their fair share of the assets (*i.e.* one fifth of £8,000: £1,600).
- Therefore the insurance company applies a market value reduction of £400 to ensure the interests of the remaining policyholders are protected.

MVRs are sometimes euphemistically referred to as *Market Value Adjustments* or *Unit Price Adjustments* however they never *adjust* upwards. Its more correct to think of MVRs as an extension of the smoothing process - a negative terminal bonus.

Perceived risk and actual risk

For many years with-profits policies were seen as safe alternative to deposit accounts for many investors (especially elderly investors). Years of steady reliable returns in combination with unscrupulous sales tactics from insurers fostered the impression that any 'low-risk' investor should invest in with-profits. This perceived low-risk belied the truth of the underlying investment strategies of many insurers who used large equity exposure and higher risk instruments to achieve the returns.

In the middle of the bull market of the early 2000's the UK regulator (the Financial Services Authority) responding to growing consumer complaints following the introduction of *market value reductions* imposed a new regulatory regime for with-profit providers. The **realistic reporting regime** had the combined effect of requiring the insurers to move more of their funds into lower-risk investments (corporate bonds, and gilts) to cover liabilities; and to lower projection rates in line with the new asset mix of the fund to more accurately predict future returns. Industry commentators cite this as the death knell for the with-profits policy.

Regulation

The policy value is either the basic sum assured plus the bonuses given (for conventional contracts) or the bid value of a unitised with-profits policy. This value is broadly equivalent to the value of the underlying assets. However, because of the smoothing in the contract this value may exceed the market value of the underlying assets.

Without appropriate regulation an insurance company might not have enough money to pay the value of its policies. This was the case with Equitable Life in the UK when the costs of the guarantees promised to policyholders meant that the company was forced to suspend the introduction of any new business to the With Profits fund and nearly led to the collapse of the company itself.

The Financial Services Authority (FSA) altered regulation as a consequence of this and other management failures to ensure that an insurance company keeps enough free reserves to protect the company in the event of falls in the markets. The new valuation method requires realistic valuation of the funds assets and growth prospects. In addition each firm must now publish a document called the *Principles and Practices of Financial Management* (PPFM) for each with-profits fund with a break-down of the assets and an explanation of the management processes for the fund. These documents although comprehensive are largely indigestible for consumers and are thought to be of use only for Independent Financial Advisers and other industry professionals. The realistic reporting method has been cited as a contributing factor to the proposed demutualization of Standard Life Assurance Company.

Reputation

For many years with-profit funds were very popular and large numbers of such policies were sold within the United Kingdom.

Recently with-profit funds have had a large amount of negative press due to the introduction of MVRs. This has led people to question the amount of secrecy behind the setting of a particular level of bonus and the over complexity of the product in general. Simple to understand products have been encouraged recently and the nature of the conventional with-profit fund does not fit with such simple policies. Alternatives such as a more fund-type product, CPPI or smoothed managed funds are yet to show a significant popularity amongst consumers.

Secondly the Equitable Life company sold a large number of policies with guarantees in the contract. After a series of court cases the company was required to meet these guarantees, which it did not have the money to meet. This resulted in a reduction of the value of all the policies issued by the company. This reduction received considerable negative publicity and damaged the reputation of with-profit policies.

See also

- [Life assurance](#)
- [Life insurance](#)
- [Endowment policies](#)
- [Endowment mortgages](#)
- [Insurance bonds](#)
- [Insurance companies](#)

External links

- [FSA consumer information about with-profits policies](#)
- [Association of British Insurers](#)

Actuarial science

Actuarial Science Report, 2013, Vol. 15, No. 18, 2013-18

Table 1. Life table for the total population: United States, 2003

Age	Number at risk	Number dying	Rate of mortality	Rate of mortality	Rate of mortality	Rate of mortality
(0)	(1)	(2)	(3)	(4)	(5)	(6)
0	1,000,000	10,000	0.010	0.010	0.010	0.010
1	990,000	10,000	0.010	0.010	0.010	0.010
2	980,000	10,000	0.010	0.010	0.010	0.010
3	970,000	10,000	0.010	0.010	0.010	0.010
4	960,000	10,000	0.010	0.010	0.010	0.010
5	950,000	10,000	0.010	0.010	0.010	0.010
6	940,000	10,000	0.010	0.010	0.010	0.010
7	930,000	10,000	0.010	0.010	0.010	0.010
8	920,000	10,000	0.010	0.010	0.010	0.010
9	910,000	10,000	0.010	0.010	0.010	0.010
10	900,000	10,000	0.010	0.010	0.010	0.010
11	890,000	10,000	0.010	0.010	0.010	0.010
12	880,000	10,000	0.010	0.010	0.010	0.010
13	870,000	10,000	0.010	0.010	0.010	0.010
14	860,000	10,000	0.010	0.010	0.010	0.010
15	850,000	10,000	0.010	0.010	0.010	0.010
16	840,000	10,000	0.010	0.010	0.010	0.010
17	830,000	10,000	0.010	0.010	0.010	0.010
18	820,000	10,000	0.010	0.010	0.010	0.010
19	810,000	10,000	0.010	0.010	0.010	0.010
20	800,000	10,000	0.010	0.010	0.010	0.010
21	790,000	10,000	0.010	0.010	0.010	0.010
22	780,000	10,000	0.010	0.010	0.010	0.010
23	770,000	10,000	0.010	0.010	0.010	0.010
24	760,000	10,000	0.010	0.010	0.010	0.010
25	750,000	10,000	0.010	0.010	0.010	0.010
26	740,000	10,000	0.010	0.010	0.010	0.010
27	730,000	10,000	0.010	0.010	0.010	0.010
28	720,000	10,000	0.010	0.010	0.010	0.010
29	710,000	10,000	0.010	0.010	0.010	0.010
30	700,000	10,000	0.010	0.010	0.010	0.010
31	690,000	10,000	0.010	0.010	0.010	0.010
32	680,000	10,000	0.010	0.010	0.010	0.010
33	670,000	10,000	0.010	0.010	0.010	0.010
34	660,000	10,000	0.010	0.010	0.010	0.010
35	650,000	10,000	0.010	0.010	0.010	0.010
36	640,000	10,000	0.010	0.010	0.010	0.010
37	630,000	10,000	0.010	0.010	0.010	0.010
38	620,000	10,000	0.010	0.010	0.010	0.010
39	610,000	10,000	0.010	0.010	0.010	0.010
40	600,000	10,000	0.010	0.010	0.010	0.010
41	590,000	10,000	0.010	0.010	0.010	0.010
42	580,000	10,000	0.010	0.010	0.010	0.010
43	570,000	10,000	0.010	0.010	0.010	0.010
44	560,000	10,000	0.010	0.010	0.010	0.010
45	550,000	10,000	0.010	0.010	0.010	0.010
46	540,000	10,000	0.010	0.010	0.010	0.010
47	530,000	10,000	0.010	0.010	0.010	0.010
48	520,000	10,000	0.010	0.010	0.010	0.010
49	510,000	10,000	0.010	0.010	0.010	0.010
50	500,000	10,000	0.010	0.010	0.010	0.010
51	490,000	10,000	0.010	0.010	0.010	0.010
52	480,000	10,000	0.010	0.010	0.010	0.010
53	470,000	10,000	0.010	0.010	0.010	0.010
54	460,000	10,000	0.010	0.010	0.010	0.010
55	450,000	10,000	0.010	0.010	0.010	0.010
56	440,000	10,000	0.010	0.010	0.010	0.010
57	430,000	10,000	0.010	0.010	0.010	0.010
58	420,000	10,000	0.010	0.010	0.010	0.010
59	410,000	10,000	0.010	0.010	0.010	0.010
60	400,000	10,000	0.010	0.010	0.010	0.010
61	390,000	10,000	0.010	0.010	0.010	0.010
62	380,000	10,000	0.010	0.010	0.010	0.010
63	370,000	10,000	0.010	0.010	0.010	0.010
64	360,000	10,000	0.010	0.010	0.010	0.010
65	350,000	10,000	0.010	0.010	0.010	0.010
66	340,000	10,000	0.010	0.010	0.010	0.010
67	330,000	10,000	0.010	0.010	0.010	0.010
68	320,000	10,000	0.010	0.010	0.010	0.010
69	310,000	10,000	0.010	0.010	0.010	0.010
70	300,000	10,000	0.010	0.010	0.010	0.010
71	290,000	10,000	0.010	0.010	0.010	0.010
72	280,000	10,000	0.010	0.010	0.010	0.010
73	270,000	10,000	0.010	0.010	0.010	0.010
74	260,000	10,000	0.010	0.010	0.010	0.010
75	250,000	10,000	0.010	0.010	0.010	0.010
76	240,000	10,000	0.010	0.010	0.010	0.010
77	230,000	10,000	0.010	0.010	0.010	0.010
78	220,000	10,000	0.010	0.010	0.010	0.010
79	210,000	10,000	0.010	0.010	0.010	0.010
80	200,000	10,000	0.010	0.010	0.010	0.010
81	190,000	10,000	0.010	0.010	0.010	0.010
82	180,000	10,000	0.010	0.010	0.010	0.010
83	170,000	10,000	0.010	0.010	0.010	0.010
84	160,000	10,000	0.010	0.010	0.010	0.010
85	150,000	10,000	0.010	0.010	0.010	0.010
86	140,000	10,000	0.010	0.010	0.010	0.010
87	130,000	10,000	0.010	0.010	0.010	0.010
88	120,000	10,000	0.010	0.010	0.010	0.010
89	110,000	10,000	0.010	0.010	0.010	0.010
90	100,000	10,000	0.010	0.010	0.010	0.010
91	90,000	10,000	0.010	0.010	0.010	0.010
92	80,000	10,000	0.010	0.010	0.010	0.010
93	70,000	10,000	0.010	0.010	0.010	0.010
94	60,000	10,000	0.010	0.010	0.010	0.010
95	50,000	10,000	0.010	0.010	0.010	0.010
96	40,000	10,000	0.010	0.010	0.010	0.010
97	30,000	10,000	0.010	0.010	0.010	0.010
98	20,000	10,000	0.010	0.010	0.010	0.010
99	10,000	10,000	0.010	0.010	0.010	0.010
100	0	0	0.000	0.000	0.000	0.000

2003 US mortality ([life](#)) table,

Table 1, Page 1

Actuarial science applies mathematical and statistical methods to finance and [insurance](#), particularly to the assessment of risk. [Actuaries](#) are professionals who are qualified in this field through highly competitive examinations and experience.

Actuarial science includes a number of interrelating disciplines, including probability and statistics, finance, and economics. Historically, actuarial science used deterministic models in the construction of tables and premiums. The science has gone through revolutionary changes during the last 30 years due to the proliferation of high speed computers and the synergy of stochastic actuarial models with modern financial theory ([Frees 1990](#)).

In traditional life insurance, actuarial science focuses on the analysis of mortality, the production of [life tables](#), and the application of compound interest to produce life insurance, annuities and endowment policies. Contemporary life insurance programs have been extended to include credit and mortgage insurance, key man insurance for small businesses, [long term care insurance](#) and medical savings accounts ([Hsiao 2001](#)).

In health insurance and corporate benefit programs in the USA, and social insurance, actuarial science focuses on the analyses of rates of disability, morbidity, mortality, fertility and other contingencies.

The effects of the geographical distribution of the utilization of medical services and procedures, and the utilization of drugs and therapies, is also of great importance. These factors underly the development of the Resource-Base Relative Value Scale (RBRVS) at Harvard in a multi-disciplined study. (Hsiao 1988) Actuarial science also aids in the design of benefit structures, reimbursement standards, and the effects of proposed governemnt standards on the cost of healthcare (cf. CHBRP 2004).

In the pension industry, actuarial methods are used to measure the costs of alternative strategies with regard to the design, maintenance or redesign of pension plans. The strategies are greatly influenced by collective bargaining; the employer's old, new and foreign competitors; the changing demographics of the workforce; changes in the internal revenue code; changes in the attitude of the internal revenue service regarding the calculation of surpluses; and equally importantly, both the short and long term financial and economic trends. It is common with mergers and acquisitions that several pension plans have to be combined or at least administered on an equitable basis. When benefit changes occur, old and new benefit plans have to be blended, satisfying the demands of political correctness and various government discrimination test calculations, and providing employees and retirees with understandable choices and transition paths. Benefit plans liabilities have to be properly valued, reflecting both earned benefits for past service, and the benefits for future service. Finally, funding schemes have to be developed that are manageable and satisfy the Financial Accounting Standards Board (FASB).

In social welfare programs, the Office of the Chief Actuary (OCACT), Social Security Administration plans and directs a program of actuarial estimates and analyses relating to SSA-administered retirement, survivors and disability insurance programs and to proposed changes in those programs. It evaluates operations of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund, conducts studies of program financing, performs actuarial and demographic research on social insurance and related program issues involving mortality, morbidity, utilization, retirement, disability, survivorship, marriage, unemployment, poverty, old age, families with children, etc., and projects future workloads. In addition, the Office is charged with conducting cost analyses relating to the Supplemental Security Income (SSI) program, a general-revenue financed, means-tested program for low-income aged, blind and disabled people. The Office provides technical and consultative services to the Commissioner, to the Board of Trustees of the Social Security Trust Funds, and its staff appears

before Congressional Committees to provide expert testimony on the actuarial aspects of Social Security issues.

In the property and casualty insurance fields, which protect against losses like those caused by hurricanes as well as automobile accidents, actuarial science tries to forecast aggregate losses to persons and property.

In reinsurance, actuarial science attempts to predict the behavior of large blocks of policies affecting a particular cedant company. This can be very different from cedant to cedant, as it depends strongly on the insured's claims handling and underwriting abilities.

Many universities have undergraduate and graduate degree programs in actuarial science.

Development

Pre-formalization

In the ancient world there was no room for the sick, suffering, disabled, aged, or the poor—it was not part of the cultural consciousness of societies (Perkins 1995). Early methods of protection involved charity; religious organizations or neighbors would collect for the destitute and needy. By the middle of the third century, 1,500 suffering people were being supported by charitable operations in Rome (Perkins 1995). Charitable protection is still an active form of support to this very day (Tong 2006). However, receiving charity is uncertain and is often accompanied by social stigma. Elementary mutual aid agreements and pensions did arise in antiquity (Thucydides c. 431BCE). Early in the Roman empire, associations were formed to meet the expenses of burial, cremation, and monuments—precursors to burial insurance and friendly societies. A small sum was paid into a communal fund on a weekly basis, and upon the death of a member, the fund would cover the expenses of rites and burial. These societies sometimes sold shares in the building of columbaria, or burial vaults, owned by the fund—the precursor to mutual insurance companies (Johnston 1903, §475–§476). Other early examples of mutual surety and assurance pacts can be traced back to various forms of fellowship within the Saxon clans of England and their Germanic forbears, and to Celtic society (Loan 1992). However, many of these earlier forms of surety and aid would often fail due to lack of understanding and knowledge (Faculty and Institute of Actuaries 2004).

Initial development

The seventeenth century was a period of extraordinary advances in mathematics in Germany, France and England. At the same time there was a rapidly growing desire and need to place the valuation of personal risk on a more scientific basis. Independently from each other, compound interest was studied and probability theory emerged as a well understood mathematical discipline. Another important advance came in 1662 from a London draper named John Graunt, who showed that there were predictable patterns of longevity and death in a defined group, or cohort, of people, despite the uncertainty about the future longevity or mortality of any one individual person.

This study became the basis for the original [life table](#). It was now possible set up an insurance scheme to provide life insurance or pensions for a group of people, and to calculate with some degree of accuracy, how much each person in the group should contribute to a common fund assumed to earn a fixed rate of interest. The first person to demonstrate publicly how this could be done was Edmond Halley. In addition to constructing his own life table, Halley demonstrated a method of using his life table to calculate the [premium](#) or amount of money someone of a given age should pay to purchase a life-annuity ([Halley 1693](#)).

Early actuaries

James Dodson's pioneering work on the level premium system led to the formation of the Society for Equitable Assurances on Lives and Survivorship (now commonly known as Equitable Life) in London in 1762. The company still exists, though it has run into difficulties recently. This was the first life insurance company to use premium rates which were calculated scientifically for long-term life policies. Many other life insurance companies and pension funds were created over the following 200 years. It was the Society for Equitable Assurances which first used the term 'actuary' for its chief executive officer in 1762. Previously, the use of the term had been restricted to an official who recorded the decisions, or 'acts', of ecclesiastical courts (Faculty and Institute of Actuaries 2004). Other companies which did not originally use such mathematical and scientific methods, most often failed, or were forced to adopt the methods pioneered by Equitable ([Bühlmann 1997 p. 166](#)).

Effects of technology

In the eighteenth and nineteenth centuries, computational complexity was limited to manual calculations. The actual calculations required to compute fair insurance premiums are rather complex. The actuaries of that time developed methods to construct easily-used tables, using sophisticated approximations called commutation functions, to facilitate timely, accurate, manual calculations of premiums ([Slud 2006](#)). Over time, actuarial organizations were founded to support and further both actuaries and **actuarial science**, and to protect the public interest by ensuring competency and ethical standards ([Hickman 2004 p. 4](#)). However, calculations remained cumbersome, and actuarial shortcuts were commonplace. Non-life actuaries followed in the footsteps of their life compatriots in the early

twentieth century. The 1920 revision to workers compensation rates took over two months of around-the-clock work by day and night teams of actuaries (Michelbacher 1920 p. 224, 230). In the 1930s and 1940s, however, the rigorous mathematical foundations for stochastic processes were developed (Bühlmann 1997 p. 168). Actuaries could now begin to forecast losses using models of random events, instead of the deterministic methods they had been constrained to in the past. The introduction and development of the computer industry further revolutionized the actuarial profession. From pencil-and-paper to punchcards to current high-speed devices, the modeling and forecasting ability of the actuary has grown exponentially, and actuaries needed to adjust to this new world (MacGinnitie 1980 p.50-51).

Actuarial science and modern financial economics

Some aspects of traditional actuarial science are not aligned with modern financial economics. Pension actuaries have been challenged by financial economists regarding funding and investment strategies. There are two reasons for the divergence of actuarial and financial economic practices. The first deals with the sheer complexity of calculations, and the second with the heavy burden of regulations resulting from the Armstrong investigation of 1905, the Glass-Steagall Act of 1932, the adoption of the Mandatory Security Valuation Reserve by the National Association of Insurance Commissioners; the latter law cushioned market fluctuations. Finally pensions must comply with the Financial Accounting Standards Board, (FASB) in the USA and Canada. The regulatory burden led to a separation of powers regarding the management and valuation of assets and liabilities.

Historically, much of the foundation of actuarial theory predated modern financial theory. In the early twentieth century, actuaries were developing many techniques that can be found in modern financial theory, but for various historical reasons, these developments did not achieve much recognition (Whelan 2002). As a result, actuarial science developed along a different path, becoming more reliant on assumptions, as opposed to the arbitrage-free risk-neutral valuation concepts used in modern finance. The divergence is not related to the use of historical data and statistical projections of liability cash flows, but is instead caused by the manner in which traditional actuarial methods apply market data with those numbers. For example, one traditional actuarial method suggests that changing the [asset allocation](#) mix of investments can change the value of liabilities and assets (by changing the discount rate assumption). This concept is inconsistent with financial economics.

The potential of modern financial economics theory to complement existing actuarial science was recognized by actuaries in the mid-twentieth century (Bühlmann 1997 p. 169–171). In the late 1980s and early 1990s, there was a distinct effort for actuaries to combine financial theory and stochastic methods into their established models. (D'arcy 1989). Ideas from financial economics became increasingly influential in actuarial thinking, and actuarial science has started to embrace more sophisticated mathematical modelling of finance (*The Economist* 2006). Today, the profession, both in practice and in the educational syllabi of many actuarial organizations, is cognizant of the need to reflect the combined approach of tables, loss models, stochastic methods, and financial theory (Feldblum 2001 p. 8–9). However, assumption-dependent concepts are still widely used (such as the setting of the discount rate assumption as mentioned earlier), particularly in North America.

Product design adds another dimension to the debate. Financial economists argue that pension benefits are bond-like and should not be funded with equity investments without relecting the risks of not achieving expected returns. But some pension products do reflect the risks of unexpected returns. In some cases, the pension beneficiary assumes the risk, or the employer assumes the risk. The current debate now seems to be focusing on four principals. 1. financial models should be free of arbitrage; 2. assets and liabilities with identical cash flows should have the same price. This, of course, is at odds with FASB. 3. The value of an asset is independent of its financing. 4. the final issue deals with how pension assets should be invested. Essentially, pension assets should not be invested in equities for a variety of theoretical and practical reasons. (Moriarty 2006).

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were to be buried or cremated, or for the purpose of building columbria, or for both....If the members had provided places for the disposal of their bodies after death, they now provided for the necessary funeral expenses by paying into the common fund weekly a small fixed sum, easily within the reach of the poorest of them. When a member died, a stated sum was drawn from the treasury for his funeral....If the purpose of the society was the building of a columbrium, the cost was first determined and the sum total divided into what we should call shares (sorts vir + ls), each member taking as many as he could afford and paying their value into the treasury."

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Demography

Demography is the scientific study of human population dynamics. It encompasses the study of the size, structure and distribution of populations, and how populations change over time due to births, deaths, migration and ageing. Demographic analysis can relate to whole societies or to groups defined by criteria such as education, nationality, religion and ethnicity. Most countries' demography is regarded as a branch of either economics or sociology. **Formal demography** limits its object of study to the measurement of populations processes, while the more broad field of population studies also analyze the relationships between economic, social, cultural and biological processes influencing the population.[\[1\]](#)

The term demographics is often used erroneously for demography, but refers rather to selected population characteristics as used in marketing or opinion research, or the demographic profiles used in such research.

Data and methods

Demography may rely on the use of large amounts of data, including census returns and vital statistics registers, or incorporate survey data using indirect estimation techniques. The earliest modern census was carried out in the United States in 1790, although the Scandinavian countries had earlier censuses.

In many countries, particularly in the third world, reliable demographic data are still difficult to obtain; census is often equated in the minds of the people with taxation, so the people scatter when a census taker comes around. During the 1980s, for example, the population of Nigeria was widely estimated to be around 101 million people, before it was established to be as little as 89 million people (without adjustment for undercounting) in a census carried out in 1991.

Important concepts

Important concepts in demography include:

- The **crude birth rate**, the annual number of live births per thousand people.
- The **general fertility rate**, the annual number of live births per 1000 women of childbearing age (often taken to be from 15 to 49 years old, but sometimes from 15 to 44).
- **age-specific fertility rates**, the annual number of live births per 1000 women in particular age groups (usually age 15-19, 20-24 etc.)
- The **crude death rate**, the annual number of deaths per 1000 people.
- The **infant mortality rate**, the annual number of deaths of children less than 1 year old per thousand live births.
- The **expectation of life** (or **life expectancy**), the number of years which an individual at a given age can expect to live at present mortality levels.
- The **total fertility rate**, the number of live births per woman completing her reproductive life, if her childbearing at each age reflected current age-specific fertility rates.
- The **gross reproduction rate**, the number of daughters who would be born to a woman completing her reproductive life at current age-specific fertility rates.
- The **net reproduction ratio** is the expected number of daughters, per newborn prospective mother, who may or may not survive to and through the ages of childbearing.

Note that the crude death rate as defined above and applied to a whole population can give a misleading impression. For example, the number of deaths per 1000 people can be higher for developed nations than in less-developed countries, despite standards of health being better in developed countries. This is because developed countries have relatively more older people, who are more likely to die in a given year, so that the overall mortality rate can be higher even if the mortality rate at any given age is lower. A more complete picture of mortality is given by a **life table** which summarises mortality separately at each age. A life table is necessary to give a good estimate of life expectancy.

Basic demographic equation

Suppose that a country (or other entity) contains $Population_t$ persons at time t . What is the size of the population at time $t + 1$?

$$Population_{t+1} = Population_t + Births_t - Deaths_t + Immigration_t - Emigration_t$$

Net migration from time t to $t + 1$:

$$Netmigration_{t+1} = Immigration_t - Emigration_t$$

Natural increase from time t to $t + 1$

$$Naturalincrease_{t+1} = Births_t - Deaths_t$$

History

The *Natural and Political Observations ... upon the Bills of Mortality* (1662) of John Graunt contains a primitive form of life table. Mathematicians, such as Edmond Halley, developed the life table as the basis for life insurance mathematics. Richard Price was credited with the first textbook on life contingencies published in 1771. (ref: "Our Yesterdays: the History of the Actuarial Profession in North America, 1809-1979," by E.J. (Jack) Moorhead, FSA, (1/23/10 – 2/21/04), published by the Society of Actuaries as part of the profession's centennial celebration in 1989; followed later by Augustus de Morgan, 'On the Application of Probabilities to Life Contingencies', (1838). (ref: The History of Insurance, Vol 3, Edited by David Jenkins and Takau Yoneyama (1 85196 527 0): 8 Volume Set: (2000) Availability: Japan: Kinokuniya)

At the end of the 18th century, Thomas Malthus concluded that, if unchecked, populations would be subject to exponential growth. He feared that population growth would tend to outstrip growth in food production, leading to ever increasing famine and poverty (see Malthusian catastrophe); he is seen as the intellectual father of ideas of overpopulation and the limits to growth. Later more sophisticated and realistic models were presented by e.g. Benjamin Gompertz and Verhulst.

The demographic transition

Contrary to Malthus' predictions (though in line with his thoughts on moral restraint), natural population growth in most developed countries has diminished to close to zero, without being held in check by famine or lack of resources, as people in developed nations have shown a tendency to have fewer children. The fall in population growth has occurred despite large rises in life expectancy in these countries. This pattern of population growth, with slow (or no) growth in preindustrial societies, followed by fast growth as the society develops and industrialises, followed by slow growth again as it becomes more affluent, is known as the demographic transition.

Similar trends are now becoming visible in ever more developing countries, so that far from spiralling out of control, world population growth is expected to slow markedly in the next century, coming to an eventual standstill. The change is likely to be accompanied by major shifts in the proportion of world population in particular regions. The United Nations Population Division expects the absolute number of infants and toddlers in the world to begin to fall by 2015, and the number of children under 15 by 2025. Demographers at the International Institute for Applied Systems Analysis in Austria expect world population to peak at 9000 million by 2070. Throughout the 21st century, the average age of the population is likely to continue to rise.

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External links

- [Max Planck Institute for Demographic Research](#) The MPIDR began its activities in October 1996, but it has already become one of the largest non-governmental research bodies in demography in the world.
- [Online Journal Demographic Research](#) A free, open access, expedited, peer-reviewed journal of the population sciences published regularly on the web.
- [Historicalstatistics.org](#) Links to historical demographic and economic statistics
- [The Population Reference Bureau](#) has two introduction to demography texts on line. "Population Handbook" and "Population: A Lively Introduction".
- [Population Studies Center at the University of Michigan](#) one of the oldest and most active demography research centers in the United States.
- [Population Studies Center at the University of Pennsylvania](#) since 1962 turning life into statistics.
- [Center for Demography and Ecology at the University of Wisconsin,Madison](#) one of the leading centers of demographic research in the world.
- [CensusScope](#) U.S. Social Demography site containing data, charts, and color coded maps for country, state, county, and metropolitan geographies.
- [Brief review of world basic demographic trends](#) Review of world changes in population and growth, infant mortality, fertility and age distributions.
- [Brief review of world socio-demographic trends](#) Review of world changes in urbanization, education and ethnolinguistic fractionalization.
- [PopulationData.net](#) Informations and maps about populations around the world. French, with Babelfish translation.
- Phillip Longman, *The New Statesman*, 31 May 2004, "Everywhere, even in Africa, the world is running out of children"
- [Ed Stephan's Timeline of Demography](#) Highlights in the history of demography from 3800 BC to 2000 AD.
- [United Nations Population Division Homepage](#)(e.g. Population Estimates and Projections Data Online)

| [Birth rate](#) | [Buffer Theory](#) | [Compensation law of mortality](#) |
| [Life expectancy](#) | [List of causes of death by rate](#) |
| [List of countries by birth rate](#) | [Maximum life span](#)

Age-adjusted life expectancy

Age-Adjusted Life Expectancy is the estimation of how long a person is expected to live based on their current age. This is a more useful statistic than simply calculating the average life span of an entire population, because it reveals trends such as infant mortality and quality of OAP health care.

For example, a population that has a raw [life expectancy](#) of 75 years may have an age-adjusted expectancy of 60 more years for a 25 year old person (surpassing the average), but only a 40-year future expectancy for a newborn, thus showing that members of that population are likely to survive to the raw average, if they make it past childhood, but while they are in those years, they are in much greater danger than older members of the population.

Other useful information can be gleaned from age-adjusted lifespan statistics as medical technology changes over time. For example, in the United States the raw average life expectancy over the past 100 years has increased by over 50%. However, the age adjusted expectancy for 60 year old persons has only increased 10%. This means that the improvements in medical technology have done much to decrease mortality among the young, but relatively little to help the elderly. In other words, although the odds of living to old age have increased, the maximum probable lifespan has not changed dramatically.

The age-adjusted statistics will become more meaningful in the future assuming that medical technology continues its accelerating trend. If raw average life expectancy increases at an accelerating rate, it will become more meaningful to know exactly how that effects an individual as they age along with the technology. For example, a person born in 1990, who is 25 in 2015, with a life expectancy of 75, will be expected to die in 2065. However, when they are 50 in the year 2040, the average life expectancy may have increased to say 100. Does this now mean that the person is expected to live to 2090? And what if the life expectancy in say 2070, increases to 125? Unfortunately, this is not a likely opportunity for immortality, because even though in 2040 the average life expectancy may be 100, our hypothetical person has been without the benefits of futuristic medicine for the first 50 years of his or her life, and probably will not see his or her 100th birthday as likely as a person born in that year. Thus the age-adjusted life expectancy for a 50 year old in 2040 will probably be significantly lower than the average for a newborn, although if organ replacement becomes routine the differential could

change.

See also

- [Life expectancy](#)
- [Maximum life span](#)

Biodemography of human longevity

Biodemography is a multidisciplinary approach, integrating biological knowledge (studies on human biology and animal models) with demographic research on human longevity and survival. Biodemographic studies are important for understanding the driving forces of the current longevity revolution (dramatic increase in human life expectancy), forecasting the future of human longevity, and identification of new strategies for further increase in healthy and productive life span.

Biodemographic studies found a remarkable similarity in survival dynamics between humans and laboratory animals. Specifically, three general biodemographic laws of survival are found:

- (1) Gompertz-Makeham law of mortality
- (2) [Compensation law of mortality](#)
- (3) Late-life mortality deceleration

The Gompertz-Makeham law states that death rate is a sum of age-independent component (Makeham term) and age-dependent component (Gompertz function), which increases exponentially with age.

The [Compensation law of mortality](#) (late-life mortality convergence) states that the relative differences in death rates between different populations of the same biological species are decreasing with age, because the higher initial death rates are compensated by lower pace of their increase with age.

The Late-life mortality deceleration law states that death rates stop to increase exponentially at advanced ages and level-off to the late-life mortality plateau. An immediate consequence from this observation is that there is no fixed upper limit to human longevity - there is no special fixed number, which separates possible and impossible values of lifespan. This conclusion is important, because it challenge the common belief in existence of a fixed maximal human life span.

Biodemographic studies found that even genetically identical laboratory animals kept in constant environment have very different lengths of life, suggesting a crucial role of chance and early-life developmental noise in longevity determination. This leads to new approaches in understanding causes of exceptional human longevity.

As for the future of human longevity, biodemographic studies found that evolution of human lifespan had two very distinct stages – the initial stage of mortality decline at younger ages is now replaced

by a new trend of preferential improvement of the oldest-old survival. This phenomenon invalidates methods of longevity forecasting based on extrapolation of long-term historical trends.

A general explanation of these biodemographic laws of aging and longevity has been suggested based on system reliability theory.

Further reading

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See also

- [Demography](#)

External links

- [Biodemography of Human Longevity](#) - Abstract of keynote lecture, p. 42. In: Inaugural International Conference on Longevity. Final Programme and Abstracts. Sydney Convention & Exhibition Centre. Sydney, Australia, March 5-7, 2004, 94 pp

Birth rate

In [demography](#), the **crude birth rate** of a population is the number of childbirths per 1000 persons per year. It can be

$$birthrate = \frac{n}{p} 1000$$

mathematically represented by where n is the number of childbirths in that year, and p is the current population. This figure is combined with the crude death rate to produce the rate of population expansion.

Birth rate is also sometimes used to refer to the projected average number of children born to each woman over the course of her life. This is more correctly referred to as the total fertility rate.

Birth rates tend to be higher in less economically developed countries and lower in more economically developed countries.

Other methods of measuring birth rate

General fertility rate (GFR) - This measures the number of births per 1000 women aged 15 to 45

Standardised birth rate (SBR) - This compares the age-sex structure to a hypothetical standard population. This measure is usually lower than the crude birth rate

Factors affecting birth rate

- Pro-natalist policies and Anti-natalist policies from government
- Existing age-sex structure
- Social and religious beliefs - especially relation to contraception
- Female literacy levels
- Economic prosperity (although in theory when the economy is doing well families can afford to have more children in practice the higher the economic prosperity the lower the birth rate).
- Poverty levels – children can be seen as an economic resource in developing countries as they can earn money.
- Infant Mortality Rate – a family may have more children if a country's IMR is high as it is likely some of those children will die.

See also

- [List of countries by birth rate](#)

External link

- [CIA World Factbook Birth Rate List by Rank](#)

Buffer Theory

In the late 1950s a number of European countries (most notably West Germany and France) decided on a migration policy known as the **Buffer theory**.

Owing to rapid economic recovery in the post WWII period (aided by the American Marshall aid program) there were many more job vacancies than people who were available or becoming available in the workforce to fill them. To resolve this situation they decided to "import" workers from the southern Mediterranean basin (including North Africa) on a temporary capacity to fill this labour shortfall.

These workers were invitees of the governments and came to Europe initially on the understanding that they could at any point in time in the future be repatriated if and when economic circumstances changed. These Gastarbeiter as they became known in Germany were mainly young unskilled males who very often left their families behind in their country of origin and migrated alone as 'Economic Migrant'. They worked predominantly in certain areas of the economy where working conditions were poorer than those of indigenous Germans and where the rates of pay were considerably lower. Ultimately they came to predominate in low paid service rated employment. The situation remained unchanged until the 1970s economic recession.

Jobs were being lost in manufacturing and industry in particular but not necessarily in the occupational types in which the migrants worked. In 1974 the then West German government imposed a ban restricting any future economic migrants and offered the possibility of returning back to their country of origin to many others, few migrants took up the offer and stayed at their jobs or began to receive unemployment assistance from the state. This led to increased tensions and feeling of resentment from many German people.

Second Wave of migration

Throughout the 1970s and into the 1980s family reunification took place between Turkish migrants workers and their families. This reunification however took place in Germany rather than in Turkey. In a difficult Economic climate after the 1973 oil crisis it was generally believed by most Turks already in Germany that their economic circumstances would be measurably better there than back in Turkey at such a difficult time. The welfare state offered considerable financial support to all people within Germany including immigrants communities. The number of foreign residents therefore increased in absolute terms during this time period.

The German government's offer to repatriate people back to their home country was not very successful. Thus, you had a difficult situation for german government becoming increasingly worse as the number of immigrants swelled to their highest levels ever. Any resentment, hostility and bitterness already present between indigenous germans and the Turkish community became progressively worse. This often culminated in physical attacks on immigrants, arson and overt racial discrimination. There was a feeling amongst Germans that "they have taken our jobs", but this situation only arose because of Germans themselves losing their jobs in industry and manufacturing in particular in the difficult economic situation post 1973. (N.B. This 'family reunification' corresponds with the second wave on the Everett S. Lee model of migration).

Third Wave of migration

Dates to the period from 1989 onwards with the collapse of the Iron Curtain and the communist regimes in Eastern Europe. East Germans flooded into West Germany along with many 'ethnic' Germans from central and eastern Europe. Germany accepted them as they were political refugees and very often asylum seekers.

Other migration models

- Zipf's Inverse distance law (1946)
- Gravity model and the Friction of distance
- Stouffer's Theory of intervening opportunities (1940)
- Lee's Push-pull theory (1966)

Compensation law of mortality

The **compensation law of mortality** (late-life mortality convergence) states that the relative differences in death rates between different populations of the same biological species decrease with age, because the higher initial death rates in disadvantaged populations are *compensated* by lower pace of mortality increase with age.

Compensation law of mortality is a paradoxical empirical observation, and it represents a challenge for methods of survival analysis based on proportionality assumption (proportional hazard models). The compensation law of mortality also represents a great challenge for many theories of aging and mortality, which usually fail to explain this phenomenon. On the other hand, the compensation law follows directly from the reliability theory, when the compared systems have different initial levels of redundancy.

See also

- [Demography](#)

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Life expectancy

World map showing Human Life expectancy

Life expectancy is the average number of years remaining for a living being (or the average for a class of living beings) of a given age to live. Life expectancy is also called **average life span** or **mean life span**, in distinction to [maximum life span](#). Life expectancy should not be confused with median survival time (the time at which 50% of a cohort will have died).

Although it is common usage to talk about life expectancy of any living being ranging from trees, insects, dogs, stroke victims, to mine workers, this article focuses on human life expectancy in general, that is, the aging and longevity profile of the human species.

Overview

Human life expectancy at various ages and under different circumstances is carefully studied by the [insurance](#) and [actuarial](#) professions, and is calculated on the basis of historic data as shown on the mortality or annuity table used as a reference.

By way of example, if people that are aged 60 live 10 more years on the average in a country, the life expectancy of people aged 60 in that country is said to be 10. If an age is not specified, life expectancy is understood to be from birth; therefore, a statement such as "the life expectancy of group A is higher than that of group B" represents data indicating that members of group A live longer on the average than members of group B. The fact that an average is calculated over a subset of the population makes life expectancy a statistical measure.

Notice that the life expectancy is heavily dependent on the criteria used to select the group. In countries with high infant mortality rates, the life expectancy at birth is highly sensitive to the rate of death in the first few years of life. In these cases, another measure such as life expectancy at age 10 can be used to exclude the effects of infant mortality to reveal the effects of other causes of death. Typically, life expectancy at birth is specified. To calculate it, it is assumed that current mortality levels remain constant throughout the lives of the hypothetical newborns.

Life expectancy over human history

One of the biggest jumps in life expectancy coincided with the introduction of sewers, which greatly reduced the spread of disease. In the last few centuries a strong statistical effect was caused by the near elimination of infant mortality in the Western world and elsewhere. On a world-wide scale, extreme poverty still remains a barrier to increasing life expectancy in developing nations.

Life expectancy before the 'health transition' of the modern era is thought to have varied between about 20 years and 35 years, depending upon particular circumstances. It has been suggested that life expectancy fell with the introduction of plant and animal domestication because of:

- higher infection rates caused by the increase in human settlement size and density,
- poorer nutrition due to reduced meat intake and a poorer vegetable diet.[\[1\]](#)

Life expectancy recovered somewhat in the Bronze Age but it is only in recent centuries (since 1800) that it has dramatically increased. These changes are the result of a combination of factors including nutrition and public health, and medicine only marginally. The most important single factor in the increase is the reduction in death in infancy. The greatest improvements have been made in the richest parts of the world.

Life expectancy increased dramatically in the 20th century, especially in developed nations. Life expectancy at birth in the United States in 1901 was 49 years. At the end of the century it was 77 years, an increase of 57%. Similar gains have been enjoyed throughout the world. Life expectancy in India and the People's Republic of China was around 40 years at midcentury. At century's close it had risen to around 63 years. These gains were due largely to the eradication and control of numerous infectious diseases and to non-sustainable advances in agricultural technology (such as chemical fertilizers).

Basic life expectancy numbers tend to exaggerate this growth, however. The low level of pre-modern life expectancy is distorted by the previous extremely high infant and childhood mortality. If a person did make it to the age of forty they had an average of another twenty years to live. Improvements in medicine, public health, and nutrition have therefore mainly increased the numbers of people living beyond childhood, with less effect on overall average lifespan.

The major exception to this general pattern of improvement has

been in those countries worst hit by AIDS, principally in Sub-Saharan Africa, which have seen significant falls in life expectancy due to the disease in recent years. Another exception is Russia and other former USSR republics after the collapse of the Soviet Union. Life expectancy of men dropped to 59.9 years (below the official retirement age), of women to 72.43 years (1999).

In recent years, obesity-related diseases have become a major public health issue in many countries. The prevalence of obesity is thought to have reduced the potential for longer life expectancy by contributing to the rise of cancers, heart disease and diabetes in the developed world.

Throughout human history most of the increase in life expectancy arose from preventing early deaths. However, many scientists believe this will not stay true in the near future as medical advancements aimed at better monitoring day to day, medically significant test values, and simple intervention such as blood pressure and clotting level control will prevent many sudden deaths or strokes. It is widely believed by researchers, that a full half of the North American and Japanese babies born since 2000 will live to an age of 90, and 10% to 100 years of age. It is hoped, with that extended lifespan, more productive and non-debilitated years will be added to the extreme upper end of middle age.

Timeline for humans

Homo sapiens live on average 37 years in Zambia and on average 81 years in Japan. The oldest confirmed recorded age for any human is 122 years, though some people are reported to have lived longer. The following information is derived from the *Encyclopædia Britannica*, 1961:

Humans by Era, Average Lifespan (in years)

- Neanderthal, 20 (Note: Neanderthal is actually a different species from modern humans but is still considered to be a hominid)
- Neolithic, 20
- Bronze Age, 18^[2]
- Classical Greece, 28
- Classical Rome, 28
- Medieval England, 33
- End of 19th Century, 37
- Early 20th Century, 50
- Circa 1940, 65
- Current (in the Western world), 77-81

Note: These represent the life expectancies of the population as a whole. In many instances life expectancy varied considerably according to class, and knowledge of the environment.

Variations in life expectancy in the world today

There are great variations in life expectancy worldwide, mostly caused by differences in public health, medicine and nutrition from country to country.

There are also variations between groups within single countries. For example, in the United States during the early 20th century there were large differences in life expectancy between people of different ethnicity, which have since lessened. Significant differences still remain in life expectancy between men and women in the US and other developed countries, with women outliving men. These gender differences have been lessening in recent years, with men's life expectancy improving at a faster rate than women's. Poverty has a very substantial effect on life expectancy. In the United Kingdom life expectancy in the wealthiest areas is ten years longer than the poorest areas and the gap appears to be increasing as life expectancy for the prosperous continues to increase while in more deprived communities there is little increase.[\[3\]](#)

Life expectancy may also be reduced for people exposed to high levels of highway air pollution or industrial air pollution. Occupation may also have a major effect on life expectancy. Well-educated professionals working in offices have a high life expectancy, while coal miners (and in prior generations, asbestos cutters) do not. Other factors affecting an individual's life expectancy are genetic disorders, obesity, access to health care, diet, exercise, tobacco smoking, and excessive drug and alcohol use.

Life expectancy of animals and plants

The vast majority of animals have shorter life expectancies than humans do, and typically the lifespan of the animal increases with size. Some examples include:

- Cats have lifespans in the 14-20 year range.
- Large herbivores (cattle, horses, camels, deer) in the 30-50 year range.
- Birds usually live 10-30 years, with parrots - particularly macaws - and several seabirds notable exceptions, with lifespans ranging from 40-80 years.
- Elephants have lifespans of 50-80 years.
- Blue whales can live from 40 to 80 years.
- Bowhead whales are thought to live up to 200 years, with a few individuals found to have century-old harpoons embedded in their blubber.
- Dogs live 10-25 years.
- Some turtles live to 150 years or more.
- Certain trees have almost outlived recorded human history; the baobab tree can live for 1,000-4,000 years, although it is understandably difficult to measure this. Similarly long-lived are olive trees, domesticated in the Mediterranean. Several olive trees still alive today were nurtured by the ancient Greeks.
- Many corals can potentially live for over 100,000 years. However, there is no consensus among marine biologists how to determine age of a coral, and whether or not it is really a single organism.

Evolution and aging rate

The different lifespans of different plants and animals, including humans raises the question of why such lifespans are found.

The evolutionary theory is that organisms that are able by virtue of their defenses or lifestyle to live for long periods whilst avoiding accidents, disease, predation etc. are likely to have genes that code for slow aging- good repair.

This is so because if a change to the organism (for example a bird might evolve stronger wings) may mean that it is exceptionally capable of escaping from predation, then it will live longer, and die of old age. So a member of the population with the better wings who by chance has genes that code for better repair will outlast its contemporaries and have more successors. Its genes will tend to dominate more and more of the gene pool and genes for slower aging and slower reproduction rate will dominate.

Conversely a change to the environment that means that organisms die younger from a common disease will mean that organisms that have genes that code for putting more energy into reproduction than repair will do better.

The support for this theory includes the fact that better defended animals, for example cats, live longer and functionally age slower than less well defended animals such as dogs; and even small birds that can fly away from danger live for a decade or more whereas mice which cannot, die of old age in a year or two. Turtles are very well defended indeed and live for over a hundred years.

Calculating life expectancy

The starting point for calculating life expectancy is to calculate the crude death rates of people in the population at each age. For example, if one observed a group of people who were alive at their 90th birthday, and 10% of them were dead by their 91st birthday, then the crude death rate at age 90 would be 10%.

These crude death rates can be used to calculate a [life table](#), from which one can calculate the probability of surviving to each age. In actuarial notation the probability of surviving from age x to age $n + x$ is denoted ${}_np_x$.

The life expectancy at age x , denoted e_x , is then calculated by adding up these probabilities at every age. This is the expected number of complete years lived (one may think of it as the number of birthdays they celebrate).

$$e_x = \sum_{t=1}^{\infty} {}_tp_x$$

Because the age is rounded down to the last birthday, on average, it can be expected that people live half a year beyond their final birthday, and half a year is added to the curtate life expectancy to calculate the full life expectancy.

Life expectancy is by definition an arithmetic mean. It can be calculated also by integrating the survival curve from ages 0 to infinite (the ultimate age, sometimes called 'omega'). For an extinct cohort (all people born in year 1850, for example), of course, it can simply be calculated by averaging the ages at death.

Note that no allowance has been made in this calculation for expected changes in life expectancy in the future. Usually when life expectancy figures are quoted, they have been calculated like this with no allowance for expected future changes. This means that quoted life expectancy figures are not generally appropriate for calculating how long any given individual of a particular age is expected to live, as they effectively assume that current death rates will be "frozen" and not change in the future. Instead, life expectancy figures can be thought of as a useful statistic to summarise the current health status of a population. Some models do exist to account for the evolution of mortality (Lee-Carter model).

Further reading

- Leonid A. Gavrilov & Natalia S. Gavrilova (1991), *The Biology of Life Span: A Quantitative Approach*. New York: Harwood Academic Publisher, ISBN 3718649837

See also

- [Demography](#) (Population studies)
- [Maximum life span](#)

References

1. ^ Galor, Oded and Moav, Omer, "Natural Selection and the Evolution of Life Expectancy" (October 12, 2005). Minerva Center for Economic Growth Paper No. 02-05 <http://ssrn.com/abstract=563741>
2. ^ James Trefil, "Can We Live Forever?" *101 Things You Don't Know About Science and No One Else Does Either* (1996)
3. ^ Department of Health -[Tackling health inequalities](#): Status report on the Programme for Action

External links

- [Rank Order - Life expectancy at birth](#)
- [CDC year-by-year life expectancy figures for USA](#)
- [Map of life expectancy around the world](#)
- [Life expectancy and aging of animals](#)
- [Life expectancy in Roman times](#)
- [The changing influence of sex and race on life expectancy in the US](#)
- [Database of life expectancy from multiple countries](#)
- [Animal lifespans: <http://www.tesarta.com/www/resources/library/lifespans.html>, <http://www.sonic.net/~petdoc/lifespan.htm>](#)

List of causes of death by rate

This list shows causes of deaths, worldwide, for a single year (2002) arranged by the associated mortality rate. There were 57,029,000 deaths tabulated for that year. Some causes listed include deaths also included in more specific subordinate causes (as indicated by the *Group* column), and some causes are omitted, so the percentages do not sum to 100.

Group [1]	Cause	Percent of deaths	Deaths per 100,000 per year		
All	Male	Female			
–	All causes	100.00	916.1	954.7	877.1
A	Cardiovascular diseases	29.34	268.8	259.3	278.4
B	Infectious and parasitic diseases	19.12	175.2	185.1	165.1
A.1	Ischemic heart disease	12.64	115.8	121.4	110.1
C	Malignant neoplasms (cancers)	12.49	114.4	126.9	101.7
A.2	Cerebrovascular disease (Stroke)	9.66	88.5	81.4	95.6
B.1	Respiratory infections	6.95	63.7	63.5	63.8
B.1.1	Lower respiratory tract infections	6.81	62.4	62.2	62.6
D	Respiratory diseases	6.49	59.5	61.1	57.9
E	Unintentional injuries	6.23	57.0	73.7	40.2
B.2	HIV/AIDS	4.87	44.6	46.2	43.0
D.1	Chronic obstructive	4.82	44.1	45.1	43.1

	pulmonary disease				
–	Perinatal conditions	4.32	39.6	43.7	35.4
F	Digestive diseases	3.45	31.6	34.9	28.2
B.3	Diarrheal diseases	3.15	28.9	30.0	27.8
G	Intentional injuries	2.84	26.0	37.0	14.9
B.4	Tuberculosis	2.75	25.2	32.9	17.3
B.5	Malaria	2.23	20.4	19.4	21.5
C.1	Lung cancers	2.18	20.0	28.4	11.4
E.1	Road traffic accidents	2.09	19.1	27.8	10.4
B.6	Childhood diseases	1.97	18.1	18.0	18.2
H	Neuropsychiatric disorders	1.95	17.9	18.4	17.3
–	Diabetes mellitus	1.73	15.9	14.1	17.7
A.3	Hypertensive heart disease	1.60	14.6	13.4	15.9
G.1	Suicide	1.53	14.0	17.4	10.6
C.2	Stomach cancer	1.49	13.7	16.7	10.5
I	Diseases of the genitourinary system	1.49	13.6	14.1	13.1
F.1	Cirrhosis of the liver	1.38	12.6	16.1	9.1
I.1	Nephritis/nephropathy	1.19	10.9	11.0	10.7
C.3	Colorectal cancer	1.09	10.0	10.3	9.7
C.4	Liver cancer	1.08	9.9	13.6	6.2
B.6.1	Measles	1.07	9.8	9.8	9.9
G.2	Violence	0.98	9.0	14.2	3.7
–	Maternal conditions	0.89	8.2	0.0	16.5

–	Congenital abnormalities	0.86	7.9	8.1	7.7
J	Nutritional deficiencies	0.85	7.8	6.9	8.7
C.5	Breast cancer	0.84	7.7	0.1	15.3
C.6	Esophageal cancer	0.78	7.2	9.1	5.2
A.4	Inflammatory heart disease	0.71	6.5	6.7	6.2
H.1	Alzheimer's disease and other dementias	0.70	6.4	4.7	8.1
E.2	Falls	0.69	6.3	7.5	5.0
E.3	Drowning	0.67	6.1	8.4	3.9
E.4	Poisoning	0.61	5.6	7.2	4.0
C.7	Lymphomas, multiple myeloma	0.59	5.4	5.4	5.4
A.5	Rheumatic heart disease	0.57	5.3	4.4	6.1
C.8	Oral cancers and oropharynx cancers	0.56	5.1	7.1	3.1
E.5	Fires	0.55	5.0	3.8	6.2
B.6.2	Pertussis	0.52	4.7	4.7	4.8
C.9	Prostate cancer	0.47	4.3	8.6	0.0
C.10	Leukemia	0.46	4.2	4.7	3.8
F.2	Peptic ulcer disease	0.46	4.2	5.0	3.5
J.1	Protein-energy malnutrition	0.46	4.2	4.2	4.2
–	Endocrine/nutritional disorders	0.43	3.9	3.4	4.4
D.2	Asthma	0.42	3.9	3.9	3.8
C.11	Cervical	0.42	3.8	0.0	7.7

C.12	cancer Pancreatic cancer	0.41	3.7	3.9	3.5
B.6.3	Tetanus	0.38	3.4	3.4	3.5
B.7	Sexually transmitted diseases excluding HIV	0.32	2.9	2.9	2.9
C.13	Bladder cancer	0.31	2.9	4.0	1.7
B.8	Meningitis	0.30	2.8	2.9	2.7
G.3	War	0.30	2.8	5.0	0.5
B.7.1	Syphilis	0.28	2.5	2.7	2.3
–	Neoplasms other than malignant	0.26	2.4	2.4	2.4
J.2	Iron deficiency anemia	0.24	2.2	1.5	2.9
C.14	Ovarian cancer	0.24	2.2	0.0	4.4
B.9	Tropical diseases	0.23	2.1	2.5	1.6
H.2	Epilepsy	0.22	2.0	2.2	1.8
–	Musculoskeletal diseases	0.19	1.7	1.2	2.2
B.10	Hepatitis B	0.18	1.7	2.3	1.0
H.3	Parkinson's disease	0.17	1.6	1.6	1.6
H.4	Alcohol use disorders	0.16	1.5	2.5	0.4
H.5	Drug use disorders	0.15	1.4	2.2	0.5
B.1.2	Upper respiratory infections	0.13	1.2	1.2	1.2
C.15	Uterine cancer	0.12	1.1	0.0	2.3
–	Skin diseases	0.12	1.1	0.8	1.4
C.16	Melanoma and other skin	0.12	1.1	1.1	1.0

	cancers				
B.11	Hepatitis C	0.09	0.9	1.1	0.6
B.9.1	Leishmaniasis	0.09	0.8	1.0	0.7
B.9.2	Trypanosomiasis	0.08	0.8	1.0	0.5
I.2	Benign	0.06	0.5	1.0	0.0
	prostatic				
	hyperplasia				

Source: World Health Organization, 2004.

Notes

1. ^ *Group* is a value showing the relationship of groups of causes. For instance, statistics for "A" (cardiovascular diseases) include those for "A.1" (ischemic heart disease), "A.2" (cerebrovascular disease), and so on. If no value is shown for a cause, there are no other causes grouped with that cause.

References

- World Health Organization, 2004. *The world health report 2004 - changing history*, "Annex Table 2: Deaths by cause, sex and mortality stratum in WHO regions, estimates for 2002". [PDF](#)

List of countries by birth rate

This is a **list of countries by birth rate**, based on The World Factbook, as at September 2005. ^[1] For informational purposes several non-sovereign entities are also included in this list.

Rank by sovereign state	Rank by entity	Entity	Birth rate (births/1,000 population)	Date of Information
—	—	World	20.15	
1	1	Niger	51.33	2005 est.
2	2	Mali	49.99	2005 est.
3	3	Uganda	47.39	2005 est.
4	4	Afghanistan	47.02	2005 est.
5	5	Chad	46.17	2005 est.
6	6	Sierra Leone	46.13	2005 est.
7	7	Burkina Faso	45.96	2005 est.
8	8	Angola	45.63	2005 est.
9	9	Somalia	45.62	2005 est.
10	10	Liberia	45.61	2005 est.
11	11	Democratic Republic of the Congo	44.07	2005 est.
12	12	Malawi	43.49	2005 est.
13	13	Yemen	43.07	2005 est.
14	14	Republic of the Congo	43.01	2005 est.
15	15	Burundi	42.46	2005 est.
16	16	Guinea	42.01	2005 est.
17	17	Madagascar	41.66	2005 est.
—	18	Mayotte (France)	41.58	2005 est.
18	19	Mauritania	41.43	2005 est.
19	20	Zambia	41.38	2005 est.
20	21	Sao Tome and Principe	40.80	2005 est.
21	22	Nigeria	40.65	2005 est.
22	23	Rwanda	40.60	2005 est.
23	24	Kenya	40.13	2005 est.
—	25	Gaza Strip	40.03	2005 est.
24	26	Djibouti	39.98	2005 est.
25	27	The Gambia	39.89	2005 est.
26	28	Benin	39.58	2005 est.

27	29	Ethiopia	38.61	2005 est.
28	30	Tanzania	38.16	2005 est.
29	31	Guinea-Bissau	37.62	2005 est.
30	32	Comoros	37.52	2005 est.
31	33	Togo	37.17	2005 est.
32	34	Oman	36.73	2005 est.
33	35	Haiti	36.59	2005 est.
34	36	Gabon	36.34	2005 est.
35	37	Equatorial Guinea	36.01	2005 est.
36	38	Laos	35.99	2005 est.
37	39	Mozambique	35.79	2005 est.
38	40	Côte d'Ivoire	35.51	2005 est.
39	41	Maldives	35.43	2005 est.
40	42	Sudan	35.17	2005 est.
41	43	Eritrea	34.78	2005 est.
42	44	Central African Republic	34.32	2005 est.
43	45	Cameroon	34.30	2005 est.
44	46	Bhutan	34.03	2005 est.
45	47	Marshall Islands	33.52	2005 est.
46	48	Senegal	33.42	2005 est.
47	49	Tajikistan	32.58	2005 est.
48	50	Iraq	32.50	2005 est.
—	51	West Bank	32.37	2005 est.
49	52	Nepal	31.45	2005 est.
50	53	Ghana	31.12	2005 est.
51	54	Kiribati	30.86	2005 est.
52	55	Solomon Islands	30.74	2005 est.
53	56	Guatemala	30.56	2005 est.
54	57	Pakistan	30.42	2005 est.
55	58	Bangladesh	30.01	2005 est.
56	59	Papua New Guinea	29.95	2005 est.
57	60	Saudi Arabia	29.56	2005 est.
58	61	Paraguay	29.43	2005 est.
59	62	Belize	29.32	2005 est.
60	63	Honduras	28.87	2005 est.
61	64	Syria	28.29	2005 est.
62	65	Zimbabwe	28.22	2005 est.
63	66	Swaziland	27.92	2005 est.

64	67	Turkmenistan	27.68	2005 est.
65	68	East Timor	27.19	2005 est.
66	69	El Salvador	27.04	2005 est.
67	70	Cambodia	26.93	2005 est.
68	71	Libya	26.82	2005 est.
69	72	Uzbekistan	26.22	2005 est.
70	73	Cape Verde	25.33	2005 est.
71	74	Philippines	25.31	2005 est.
72	75	Tonga	25.18	2005 est.
73	76	Namibia	25.16	2005 est.
74	77	Nauru	25.14	2005 est.
75	78	Lesotho	25.12	2005 est.
76	79	Federated States of Micronesia	25.11	2005 est.
77	80	Nicaragua	24.88	2005 est.
78	81	Bolivia	23.76	2005 est.
79	82	Dominican Republic	23.51	2005 est.
80	83	Botswana	23.33	2005 est.
81	84	Egypt	23.32	2005 est.
—	85	American Samoa (US)	23.13	2005 est.
82	86	Malaysia	23.07	2005 est.
83	87	Vanuatu	23.06	2005 est.
84	88	Fiji	22.73	2005 est.
85	89	Ecuador	22.67	2005 est.
86	90	Kyrgyzstan	22.48	2005 est.
87	91	India	22.32	2005 est.
88	92	Grenada	22.30	2005 est.
89	93	Morocco	22.29	2005 est.
—	94	Turks and Caicos Islands (UK)	22.23	2005 est.
90	95	Panama	22.00	2005 est.
91	96	Tuvalu	21.91	2005 est.
92	97	Kuwait	21.88	2005 est.
93	98	Jordan	21.76	2005 est.
94	99	Mongolia	21.52	2005 est.
95	100	Jamaica	21.25	2005 est.
96	101	Mexico	21.01	2005 est.
97	102	Peru	20.87	2005 est.
98	103	Colombia	20.82	2005 est.
99	104	Indonesia	20.71	2005 est.

—	105	French Guiana (France)	20.70	2005 est.
100	106	Azerbaijan	20.40	2005 est.
101	107	Saint Lucia	20.05	2005 est.
—	108	Northern Mariana Islands (US)	19.51	2005 est.
—	109	Réunion (France)	19.26	2005 est.
—	110	Guam (US)	19.03	2005 est.
102	111	Brunei	19.01	2005 est.
103	112	Venezuela	18.91	2005 est.
104	113	Lebanon	18.88	2005 est.
105	114	United Arab Emirates	18.78	2005 est.
106	115	Costa Rica	18.60	2005 est.
—	116	New Caledonia (France)	18.49	2005 est.
107	117	South Africa	18.48	2005 est.
108	118	Guyana	18.45	2005 est.
109	119	Suriname	18.39	2005 est.
110	120	Palau	18.37	2005 est.
111	121	Israel	18.21	2005 est.
112	122	Myanmar	18.12	2005 est.
113	123	Saint Kitts and Nevis	18.12	2005 est.
114	124	Bahrain	18.10	2005 est.
115	125	The Bahamas	17.87	2005 est.
—	126	Montserrat (UK)	17.56	2005 est.
116	127	Antigua and Barbuda	17.26	2005 est.
117	128	Algeria	17.13	2005 est.
118	129	Vietnam	17.07	2005 est.
—	130	French Polynesia (France)	16.93	2005 est.
119	131	Argentina	16.90	2005 est.
120	132	Brazil	16.83	2005 est.
121	133	Turkey	16.83	2005 est.
122	134	Iran	16.83	2005 est.
123	135	Saint Vincent	16.34	2005 est.

		and the Grenadines		
124	136	Seychelles	16.22	2005 est.
125	137	North Korea	16.09	2005 est.
126	138	Samoa	15.95	2005 est.
—	139	Greenland (Denmark)	15.93	2005 est.
127	140	Kazakhstan	15.78	2005 est.
128	141	Dominica	15.73	2005 est.
129	142	Sri Lanka	15.63	2005 est.
130	143	Mauritius	15.62	2005 est.
131	144	Qatar	15.54	2005 est.
132	145	Tunisia	15.50	2005 est.
133	146	Chile	15.44	2005 est.
—	147	Guadeloupe (France)	15.42	2005 est.
134	148	Moldova	15.27	2005 est.
135	149	Albania	15.08	2005 est.
—	150	Netherlands Antilles (Netherlands)	15.00	2005 est.
—	151	British Virgin Islands (UK)	14.88	2005 est.
136	152	Ireland	14.47	2005 est.
—	153	Anguilla (UK)	14.26	2005 est.
—	154	U.S. Virgin Islands (US)	14.20	2005 est.
—	155	Martinique (France)	14.14	2005 est.
137	156	United States	14.14	2005 est.
138	157	Uruguay	14.09	2005 est.
139	158	Thailand	14.00	2005 est.
—	159	Faroe Islands (Denmark)	13.97	2005 est.
140	160	New Zealand	13.90	2005 est.
—	161	Saint Pierre and Miquelon (France)	13.83	2005 est.
141	162	Iceland	13.73	2005 est.
142	163	People's Republic of China (mainland only)	13.14	2005 est.

—	164	Cayman Islands (UK)	12.92	2005 est.
—	165	Puerto Rico (US)	12.88	2005 est.
143	166	Barbados	12.81	2005 est.
144	167	Trinidad and Tobago	12.72	2005 est.
145	168	Republic of China (Taiwan Area only)	12.64	2005 est.
146	169	Cyprus	12.57	2005 est.
—	170	Saint Helena	12.33	2005 est.
147	171	Australia	12.26	2005 est.
148	172	France (metropolitan)	12.15	2005 est.
149	173	Serbia and Montenegro	12.12	2005 est.
150	174	Luxembourg	12.06	2005 est.
151	175	Cuba	12.03	2005 est.
152	176	Macedonia	12.00	2005 est.
153	177	Armenia	11.76	2005 est.
154	178	Norway	11.67	2005 est.
—	179	Bermuda (UK)	11.60	2005 est.
155	180	Denmark	11.36	2005 est.
—	181	Aruba (Netherlands)	11.26	2005 est.
—	182	Isle of Man (UK)	11.18	2005 est.
156	183	Netherlands	11.14	2005 est.
—	184	Gibraltar (UK)	10.87	2005 est.
157	185	Canada	10.84	2005 est.
158	186	Belarus	10.83	2005 est.
159	187	Portugal	10.82	2005 est.
160	188	United Kingdom	10.78	2005 est.
161	189	Romania	10.70	2005 est.
162	190	Slovakia	10.62	2005 est.
163	191	Finland	10.50	2005 est.
164	192	Belgium	10.48	2005 est.
165	193	Liechtenstein	10.41	2005 est.
166	194	Sweden	10.36	2005 est.

167	195	Georgia	10.25	2005 est.
168	196	San Marino	10.18	2005 est.
169	197	Malta	10.17	2005 est.
170	198	Spain	10.10	2005 est.
171	199	South Korea	10.04	2005 est.
—	—	European Union	10.00	July 2005 est.
172	200	Estonia	9.91	2005 est.
173	201	Russia	9.80	2005 est.
174	202	Switzerland	9.77	2005 est.
175	203	Hungary	9.76	2005 est.
176	204	Greece	9.72	2005 est.
177	205	Poland	9.72	2005 est.
178	217	Italy	9.70	2005 est.
179	206	Bulgaria	9.66	2005 est.
—	207	Jersey (UK)	9.66	2005 est.
180	208	Croatia	9.57	2005 est.
181	209	Singapore	9.49	2005 est.
182	210	Japan	9.47	2005 est.
183	211	Monaco	9.26	2005 est.
184	212	Czech Republic	9.07	2005 est.
185	213	Latvia	9.04	2005 est.
—	214	Guernsey (UK)	9.01	2005 est.
186	215	Andorra	9.00	2005 est.
187	216	Slovenia	8.95	2005 est.
188	218	Austria	8.81	2005 est.
189	219	Bosnia and Herzegovina	8.75	2005 est.
190	220	Ukraine	8.67	2005 est.
191	221	Lithuania	8.62	2005 est.
—	222	Macau (People's Republic of China)	8.47	2005 est.
192	223	Germany	8.33	2005 est.
—	224	Hong Kong (People's Republic of China)	7.26	2005 est.

Reference

- [The World Factbook](#)

Maximum life span

Maximum life span is a measure of the maximum number of years a member of a group has been observed to survive. Maximum life span literally corresponds to the age at which the oldest known member of a species or experimental group has died. Maximum life span is contrasted to mean life span (average lifespan or [life expectancy](#)). Mean life span varies with susceptibility to disease, accident, suicide and homicide, whereas maximum life span is determined by "rate of aging". Epistemologically maximum life span also depends upon initial sample size.^[1] In animal studies, maximum life span is typically taken to be the mean life span of the most long-lived 10% of a given cohort. This may be taken to be "definition 2" of 'maximum life span.'

Overview

In ancient Rome average life span was 22 years, but by the mid1800s the typical North American lived to be 40. Today, people in the most developed countries have an average life span of about 80. Reduction of infant mortality has accounted for most of the increased longevity, but since the 1960s mortality rates among those over 80 years has been decreasing by about 1.5% per year. Maximum life span for humans, however, has remained about 115120 all through known history. The oldest-ever person was Jeanne Calment, a French woman who lived for 122 years and 164 days.

Advances in medicine, calorie restriction with adequate nutrition, or other interventions are said to have slowed the aging process.

The maximum life span of each species is different. These differences demonstrate the role of genetics in determining maximum life span ("rate of aging"). The records are:

- goldfish 49
- mice 4
- for dogs 29;
- for cats 34;
- for horses, 62;
- for elephants, 78;
- for humans, 122.

The longest-lived animals have been variously described as

- tortoises (188 years)
- whales (about 210 years)

Although considered fiction for a time, recent research has indicated that bowhead whales recently killed still had harpoons in their bodies from the 1790's, which, along with analysis of amino acids, has indicated a maximum life span so far of 211 years [\[1\]](#). Birds and squirrels rarely live to their maximum life span, usually dying of accidents and disease. Grazing animals show wear-and-tear to their teeth to the point where they can no longer eat, and they die of starvation.

The maximum life span of most species has not been accurately determined because the data collection has been minimal and the number of species studied in captivity (or by monitoring in the wild) has been small. Maximum life span is usually longer for species that are larger, can fly and have larger brains. Of the approximately

30,000 genes in the human genome, it is estimated that only 2% of these are different from those of a chimpanzee, which has half the estimated maximum life span of a human. The difference in longevity could be due to as few as a hundred genes or less, however there may be other factors which influence the life span of chimpanzees.

Identical twins tend to die within 3 years of each other, whereas fraternal twins tend to die within 6 years. Aging theories associated with DNA include programmed aging (or programmed aging-resistance) and theories that link aging with DNA damage/mutation or DNA repair capability.

Plants tend to come in annuals, biennials, and perennials. The longer-lived perennials, woody-stemmed plants such as trees and bushes, often live for hundreds and even thousands of years. The oldest-known tree is the bristlecone pine, at 4700 years; it has been claimed that creosote bushes live for 11,000 years, but claims of this nature are based on estimates, rather than actual ring counts.

Increasing maximum life span

Currently, the only (non-transgenic) method of increasing maximum life span that is recognized by biogerontologists is calorie restriction with adequate nutrition. However, this is true only if we use definition 2 of maximum life span, as caloric restriction has not yet been shown to break mammalian world records for longevity. Rats, mice and hamsters experience maximum life span extension from a diet which contains 40-60% of the calories (but all of the required nutrients) which the animals consume when they can eat as much as they want. Mean life span is increased 65% and maximum life span is increased 50%, when calorie restriction is begun just before puberty. (For a recent review of maximum life span extension by calorie restriction in rodent studies, see [GENES & DEVELOPMENT; Koubova,J; 17(3):313-321 (2003)] [2]). For fruit flies the life extending benefits of calorie restriction are gained immediately at any age upon beginning calorie restriction and ended immediately at any age upon resuming full feeding [SCIENCE; Mair,W; 301:1731-1733 (2003) [3]].

Mammals fed anti-oxidants show up to a 30% increase in mean life span, but no increase in maximum life span. Antioxidants are most valuable for animals that are cancer-prone, or subjected to radiation or chemical toxins. There are evidently homeostatic mechanisms in cells that govern the amount of allowable antioxidant activity. Many life-extensionists have dismissed the value of antioxidants simply because they have not been shown to increase maximum life span, but such a view neglects the significance of an extended mean life span.

Many transgenic species of mice have been created which have maximum life span greater than that of wild-type or laboratory mice, including Ames dwarf mice, Snell dwarf mice, mice with increased mitochondrial catalase, and others.

Some biomedical gerontologists (gerontologists who search for ways to extend maximum life span) believe that biomedical molecular engineering can someday extend maximum lifespan and even bring about rejuvenation.

One such researcher is Aubrey de Grey, who calls his project to reverse the damage we call aging SENS (Strategies for Engineered Negligible Senescence). Dr. de Grey has established the The Methuselah Mouse Prize to award money to researchers who can extend the maximum life span of mice.

Research data concerning maximum life span

- A comparison of the heart mitochondria in rats (4-year maximum life span) and pigeons (35-year maximum life span) showed that pigeon mitochondria leak fewer free-radicals than rat mitochondria, despite the fact that both animals have similar metabolic rate and cardiac output [4]
- For mammals there is a direct relationship between mitochondrial membrane saturation and maximum life span [5]
- Studies of the liver lipids of mammals and a bird (pigeon) show an inverse relationship between maximum life span and number of double bonds [6]
- Selected species of birds and mammals show an inverse relationship between telomere rate of change (shortening) and maximum life span [7]
- Maximum life span correlates negatively with antioxidant enzyme levels and correlates positively with lower rate of free-radicals production and higher rate of DNA repair [8]
- Females express both more MnSOD and more glutathione peroxidase antioxidant enzymes than males, and this has been suggested to be the reason females live longer than males in mammalian species [9]
- The maximum life span of transgenic mice has been extended about 20% by overexpression of human catalase targeted to mitochondria [10]
- A comparison of 7 non-primate mammals (mouse, hamster, rat, guinea-pig, rabbit, pig and cow) showed that the rate of mitochondrial superoxide and hydrogen peroxide production in heart and kidney were inversely correlated with maximum life span [11]
- A study of 8 non-primate mammals showed a direct correlation between maximum life span and oxidative damage to mtDNA (mitochondrial DNA) in heart & brain [12]
- A study of several species of mammals and a bird (pigeon) indicated a linear relationship between oxidative damage to protein and maximum life span [13]
- There is a direct correlation between DNA repair and maximum life span for mammalian species [14]
- *Drosophila* (fruit-flies) bred for 15 generations by only using eggs that were laid toward the end of reproductive life achieved maximum life spans 30% greater than that of controls [15]

- Overexpression of the enzyme which synthesizes glutathione in long-lived transgenic *Drosophila* (fruit-flies) extended maximum lifespan by nearly 50% [16]
- A mutation in the **age1** gene of the nematode worm *Caenorhabditis elegans* increased mean life span 65% and maximum life span 110% [17]
- Fat-specific Insulin Receptor KnockOut (**FIRKO**) mice have reduced fat mass, normal calorie intake and an increased maximum life span of 18% [18]
- The capacity of mammalian species to detoxify the carcinogenic chemical benzo(a)pyrene to a water-soluble form also correlates well with maximum life span [19]

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See also

- [Life expectancy](#)

External links

- [Mechanisms of Aging](#)
- [senescence.info](#) Informational website on the biology of aging.
- [Calorie Restriction Society](#)
- [The Longevity Meme \(Longevity Activism\)](#)
- [Strategies for Engineered Negligible Senescence \(SENS\)](#)
- [The Secrets of Long Life \(National Geographic magazine\)](#)
- [Living Longer, Living Stronger](#)
- [Eco-Eating](#)

Actuarial reserves

Actuarial reserves are generally taken to be the amount, calculated by an actuary, that an insurance company needs to keep in reserve to keep the probability of ruin below a certain threshold.

Reserves can be formulated prospectively or retrospectively. The amount of prospective reserves at a point in time is derived by subtracting the actuarial present value of future premiums from the actuarial present value of future insurance benefits. Retrospective reserving subtracts accumulated value of benefits from accumulated value of premiums as of a point in time. The two methods yield identical results.

In actuarial notation, reserve is denoted as V . For a [whole life insurance](#) of 1 payable at the end of the year of death issued on a life aged x with level premium of P per year determined at the time of policy issuance, reserve at time t can be calculated prospectively using notations for actuarial present value as:

$${}_tV_x = A_{x+t} - P_x \cdot \ddot{a}_{x+t}$$

Actuary

Actuaries are business professionals who deal with the financial impact of risk and uncertainty.

The future is full of uncertain events, some of which are undesirable. Risk is the probability that an undesirable event will occur. Actuaries are highly trained experts with a deep understanding of financial security systems, their reasons for being, their complexity, their mathematics, and the way they work (Trowbridge 1989, p. 7). They evaluate the likelihood of future events, design creative ways to quantify the contingent outcomes in order minimize losses associated with uncertain undesirable events. The impact of these undesirable events can be both emotional and financial. As some of these events, such as death, cannot be totally avoided, minimizing their financial impact is very important. These risks can impact both sides of the balance sheet and require asset management, liability management, and valuation skills. Actuaries are skilled professionals in finding ways to quantify and to manage risk. It takes a combination of strong analytical skills, business knowledge and understanding of human behavior to design and manage programs that control risk (Be An Actuary 2005).

Actuaries work in a number of [insurance](#) disciplines, which may be classified as [life](#), [health](#), pensions, annuities, and asset management, [social welfare programs](#), [property](#) and [casualty](#), and [reinsurance](#).

Life, health, and pension actuaries deal with mortality risk, morbidity and the ongoing utilization of drugs and medical services risk, and investment risk. Products prominent in their work include [life insurance](#), annuities, pensions, [mortgage](#) and [credit insurance](#), short and long term disability, and [medical](#), [dental](#) and long term care insurance. In addition to these risks, social insurance programs are greatly influenced by public opinion, politics, budget constraints, changing [demographics](#) and other factors such as medical technology, inflation and cost of living considerations (Bureau of Labor Statistics 2005).

Casualty actuaries, also known as non-life or [general insurance](#) actuaries, deal with more catastrophic, unnatural risks that can occur to people or property. Products prominent in their work include [auto insurance](#), [homeowners insurance](#), commercial property insurance, workers' compensation, [title insurance](#), malpractice insurance, products liability insurance, [directors and officers liability insurance](#), environmental and marine insurance, [terrorism insurance](#) and other types of [liability insurance](#). [Reinsurance](#) products have to

accommodate all of the previously mentioned products, and in addition have to properly reflect the increasing long term risks associated with cultural litigiousness, acts of war, terrorism and politics ([ibid](#)).

In 2002, a Wall Street Journal survey on the best jobs in the United States listed “actuary” as the second best job, while in previous editions of the list, actuaries had been the top rated job ([Lee 2002](#)).

History

Need for insurance

The basic requirements of communal interests gave rise to risk sharing since the dawn of civilization. People who lived their entire lives in a camp had the risk of fire, which would leave their band or family without shelter. As more complex forms of exchange developed beyond barter, new forms of risk manifested. Merchants embarking on trade journeys bore the risk of losing goods entrusted to them, their own possessions, or even their lives. Intermediaries developed to warehouse and trade goods, and they often suffered from financial risk. The primary providers in any extended families or household always ran the risk of premature death, disability or infirmity leaving their dependents to starve. Credit procurement was difficult if the lender worried about repayment in the event of the borrowers death or infirmity. Alternatively, people sometimes lived too long, exhausting their savings, if any, or becoming a burden on others in the extended family or society.

Early attempts

In the ancient world there was no room for the sick, suffering, disabled, aged, or the poor—it was not part of the cultural consciousness of societies ([Perkins 1995](#)). Early methods of protection involved charity; religious organizations or neighbors would collect for the destitute and needy. By the middle of the third century, 1,500 suffering people were being supported by charitable operations in Rome ([Perkins 1995](#)). Charitable protection is still an active form of support to this very day ([Tong 2006](#)). However, receiving charity is uncertain and is often accompanied by social stigma. Elementary mutual aid agreements and pensions did arise in antiquity ([Thucydides c. 431BCE](#)). Early in the Roman empire, associations were formed to meet the expenses of burial, cremation, and monuments—precursors to burial insurance and friendly societies. A small sum was paid into a communal fund on a weekly basis, and upon the death of a member, the fund would cover the expenses of rites and burial. These societies sometimes sold shares in the building of columbaria, or burial vaults, owned by the fund—the precursor to [mutual insurance companies](#) ([Johnston 1903, §475–§476](#)). Other early examples of mutual surety and assurance pacts can be traced back to

various forms of fellowship within the Saxon clans of England and their Germanic forbears, and to Celtic society ([Loan 1992](#)). However, many of these earlier forms of surety and aid would often fail due to lack of understanding and knowledge ([Faculty and Institute of Actuaries 2004](#)).

Development of theory

Table 1. Life table for the total population: United States, 2003

Age	Population at risk at start of year	Deaths during year	Deaths per 1,000 live births	Life expectancy at birth	Life expectancy at age 65	Life expectancy at age 85
0	1,000,000	10,000	10.0	78.4	14.5	4.7
1	990,000	9,900	9.9	77.5	14.4	4.6
2	980,000	9,800	9.8	76.6	14.3	4.5
3	970,000	9,700	9.7	75.7	14.2	4.4
4	960,000	9,600	9.6	74.8	14.1	4.3
5	950,000	9,500	9.5	73.9	14.0	4.2
6	940,000	9,400	9.4	73.0	13.9	4.1
7	930,000	9,300	9.3	72.1	13.8	4.0
8	920,000	9,200	9.2	71.2	13.7	3.9
9	910,000	9,100	9.1	70.3	13.6	3.8
10	900,000	9,000	9.0	69.4	13.5	3.7
11	890,000	8,900	8.9	68.5	13.4	3.6
12	880,000	8,800	8.8	67.6	13.3	3.5
13	870,000	8,700	8.7	66.7	13.2	3.4
14	860,000	8,600	8.6	65.8	13.1	3.3
15	850,000	8,500	8.5	64.9	13.0	3.2
16	840,000	8,400	8.4	64.0	12.9	3.1
17	830,000	8,300	8.3	63.1	12.8	3.0
18	820,000	8,200	8.2	62.2	12.7	2.9
19	810,000	8,100	8.1	61.3	12.6	2.8
20	800,000	8,000	8.0	60.4	12.5	2.7
21	790,000	7,900	7.9	59.5	12.4	2.6
22	780,000	7,800	7.8	58.6	12.3	2.5
23	770,000	7,700	7.7	57.7	12.2	2.4
24	760,000	7,600	7.6	56.8	12.1	2.3
25	750,000	7,500	7.5	55.9	12.0	2.2
26	740,000	7,400	7.4	55.0	11.9	2.1
27	730,000	7,300	7.3	54.1	11.8	2.0
28	720,000	7,200	7.2	53.2	11.7	1.9
29	710,000	7,100	7.1	52.3	11.6	1.8
30	700,000	7,000	7.0	51.4	11.5	1.7
31	690,000	6,900	6.9	50.5	11.4	1.6
32	680,000	6,800	6.8	49.6	11.3	1.5
33	670,000	6,700	6.7	48.7	11.2	1.4
34	660,000	6,600	6.6	47.8	11.1	1.3
35	650,000	6,500	6.5	46.9	11.0	1.2
36	640,000	6,400	6.4	46.0	10.9	1.1
37	630,000	6,300	6.3	45.1	10.8	1.0
38	620,000	6,200	6.2	44.2	10.7	0.9
39	610,000	6,100	6.1	43.3	10.6	0.8
40	600,000	6,000	6.0	42.4	10.5	0.7
41	590,000	5,900	5.9	41.5	10.4	0.6
42	580,000	5,800	5.8	40.6	10.3	0.5
43	570,000	5,700	5.7	39.7	10.2	0.4
44	560,000	5,600	5.6	38.8	10.1	0.3
45	550,000	5,500	5.5	37.9	10.0	0.2
46	540,000	5,400	5.4	37.0	9.9	0.1
47	530,000	5,300	5.3	36.1	9.8	0.0
48	520,000	5,200	5.2	35.2	9.7	0.0
49	510,000	5,100	5.1	34.3	9.6	0.0
50	500,000	5,000	5.0	33.4	9.5	0.0
51	490,000	4,900	4.9	32.5	9.4	0.0
52	480,000	4,800	4.8	31.6	9.3	0.0
53	470,000	4,700	4.7	30.7	9.2	0.0
54	460,000	4,600	4.6	29.8	9.1	0.0
55	450,000	4,500	4.5	28.9	9.0	0.0
56	440,000	4,400	4.4	28.0	8.9	0.0
57	430,000	4,300	4.3	27.1	8.8	0.0
58	420,000	4,200	4.2	26.2	8.7	0.0
59	410,000	4,100	4.1	25.3	8.6	0.0
60	400,000	4,000	4.0	24.4	8.5	0.0
61	390,000	3,900	3.9	23.5	8.4	0.0
62	380,000	3,800	3.8	22.6	8.3	0.0
63	370,000	3,700	3.7	21.7	8.2	0.0
64	360,000	3,600	3.6	20.8	8.1	0.0
65	350,000	3,500	3.5	19.9	8.0	0.0
66	340,000	3,400	3.4	19.0	7.9	0.0
67	330,000	3,300	3.3	18.1	7.8	0.0
68	320,000	3,200	3.2	17.2	7.7	0.0
69	310,000	3,100	3.1	16.3	7.6	0.0
70	300,000	3,000	3.0	15.4	7.5	0.0
71	290,000	2,900	2.9	14.5	7.4	0.0
72	280,000	2,800	2.8	13.6	7.3	0.0
73	270,000	2,700	2.7	12.7	7.2	0.0
74	260,000	2,600	2.6	11.8	7.1	0.0
75	250,000	2,500	2.5	10.9	7.0	0.0
76	240,000	2,400	2.4	10.0	6.9	0.0
77	230,000	2,300	2.3	9.1	6.8	0.0
78	220,000	2,200	2.2	8.2	6.7	0.0
79	210,000	2,100	2.1	7.3	6.6	0.0
80	200,000	2,000	2.0	6.4	6.5	0.0
81	190,000	1,900	1.9	5.5	6.4	0.0
82	180,000	1,800	1.8	4.6	6.3	0.0
83	170,000	1,700	1.7	3.7	6.2	0.0
84	160,000	1,600	1.6	2.8	6.1	0.0
85	150,000	1,500	1.5	1.9	6.0	0.0
86	140,000	1,400	1.4	1.0	5.9	0.0
87	130,000	1,300	1.3	0.1	5.8	0.0
88	120,000	1,200	1.2	0.0	5.7	0.0
89	110,000	1,100	1.1	0.0	5.6	0.0
90	100,000	1,000	1.0	0.0	5.5	0.0
91	90,000	900	0.9	0.0	5.4	0.0
92	80,000	800	0.8	0.0	5.3	0.0
93	70,000	700	0.7	0.0	5.2	0.0
94	60,000	600	0.6	0.0	5.1	0.0
95	50,000	500	0.5	0.0	5.0	0.0
96	40,000	400	0.4	0.0	4.9	0.0
97	30,000	300	0.3	0.0	4.8	0.0
98	20,000	200	0.2	0.0	4.7	0.0
99	10,000	100	0.1	0.0	4.6	0.0
100	5,000	50	0.0	0.0	4.5	0.0

2003 US mortality ([life](#))
table, Table 1, Page 1

The seventeenth century was a period of extraordinary advances in mathematics in Germany, France and England. At the same time there was a rapidly growing desire and need to place the valuation of personal risk on a more scientific basis. Independently from each other, compound interest was studied and probability theory emerged as a well understood mathematical discipline. Another important advance came in 1662 from a London draper named John Graunt, who showed that there were predictable patterns of longevity and death in a defined group, or cohort, of people, despite the uncertainty about the future longevity or mortality of any one individual person. This study became the basis for the original [life table](#). It was now possible set up an insurance scheme to provide life insurance or pensions for a group of people, and to calculate with some degree of accuracy, how much each person in the group should contribute to a common fund assumed to earn a fixed rate of interest. The first person to demonstrate publicly how this could be done was Edmond Halley. In addition to constructing his own life table, Halley demonstrated a

method of using his life table to calculate the [premium](#) or amount of money someone of a given age should pay to purchase a life-annuity ([Halley 1693](#)).

Early actuaries

James Dodson's pioneering work on the level premium system led to the formation of the Society for Equitable Assurances on Lives and Survivorship (now commonly known as Equitable Life) in London in 1762. The company still exists, though it has run into difficulties recently. This was the first life insurance company to use premium rates which were calculated scientifically for long-term life policies. Many other life insurance companies and pension funds were created over the following 200 years. It was the Society for Equitable Assurances which first used the term 'actuary' for its chief executive officer in 1762. Previously, the use of the term had been restricted to an official who recorded the decisions, or 'acts', of ecclesiastical courts ([Faculty and Institute of Actuaries 2004](#)). Other companies which did not originally use such mathematical and scientific methods, most often failed, or were forced to adopt the methods pioneered by Equitable ([Bühlmann 1997 p. 166](#)).

Development of the modern profession

Main article: [Actuarial science](#)

In the eighteenth and nineteenth centuries, computational complexity was limited to manual calculations. The actual calculations required to compute fair insurance premiums are rather complex. The actuaries of that time developed methods to construct easily-used tables, using sophisticated approximations called commutation functions, to facilitate timely, accurate, manual calculations of premiums ([Slud 2006](#)). Over time, actuarial organizations were founded to support and further both actuaries and [actuarial science](#), and to protect the public interest by ensuring competency and ethical standards ([Hickman 2004 p. 4](#)). However, calculations remained cumbersome, and actuarial shortcuts were commonplace. Non-life actuaries followed in the footsteps of their life compatriots in the early twentieth century. The 1920 revision to workers compensation rates took over two months of around-the-clock work by day and night teams of actuaries ([Michelbacher 1920 p. 224, 230](#)). In the 1930s and 1940s, however, the rigorous mathematical foundations for stochastic processes were developed ([Bühlmann 1997 p. 168](#)). Actuaries could

now begin to forecast losses using models of random events, instead of the deterministic methods they had been constrained to in the past. The introduction and development of the computer industry further revolutionized the actuarial profession. From pencil-and-paper to punchcards to current high-speed devices, the modeling and forecasting ability of the actuary has grown exponentially, and actuaries needed to adjust to this new world (MacGinnitie 1980 p.50-51).

Another modern development is the convergence of modern financial theory with actuarial science (Bühlmann 1997 p. 169–171). In the early twentieth century, actuaries were developing many techniques that can be found in modern financial theory, but for various historical reasons, these developments did not achieve much recognition (Whelan 2002). However, in the late 1980s and early 1990s, there was a distinct effort for actuaries to combine financial theory and stochastic methods into their established models (D'arcy 1989). Today, the profession, both in practice and in the educational syllabi of many actuarial organizations, is cognizant of the need to reflect the combined approach of tables, loss models, stochastic methods, and financial theory (Feldblum 2001 p. 8–9).

Responsibilities

Actuaries use skills in mathematics, economics, finance, probability and statistics, and business to help businesses assess the risk of certain events occurring, and to formulate policies that minimize the cost of that risk. For this reason, actuaries are essential to the insurance and reinsurance industry, either as staff employees or as consultants, as well as to government agencies such as the Government Actuary's Department in the UK or the Social Security Administration in the US. Actuaries assemble and analyze data to estimate the probability and likely cost of the occurrence of an event such as death, sickness, injury, disability, or loss of property. Actuaries also address financial questions, including those involving the level of pension contributions required to produce a certain retirement income and the way in which a company should invest resources to maximize its return on investments in light of potential risk. Using their broad knowledge, actuaries help design and price insurance policies, pension plans, and other financial strategies in a manner which will help ensure that the plans are maintained on a sound financial basis ([Bureau of Labor Statistics 2005](#)).

Traditional employment

On both the life and casualty sides, the classical function of actuaries is to calculate premiums and reserves for insurance policies covering various risks. Premiums are the amount of money the insurer needs to collect from the policyholder in order to cover the expected losses, expenses, and a provision for profit. Reserves are provisions for future liabilities and indicate how much money should be set aside now to reasonably provide for future payouts. If you inspect the balance sheet of an insurance company, you will find that the liability side consists mainly of reserves.

On the casualty side, this analysis often involves quantifying the probability of a loss event, called the frequency, and the size of that loss event, called the severity. Further, the amount of time that occurs before the loss event is also important, as the insurer will not have to pay anything until after the event has occurred. On the life side, the analysis often involves quantifying how much a potential sum of money or a financial liability will be worth at different points in the future. Since neither of these kinds of analysis are purely deterministic processes, stochastic models are often used to determine frequency and severity distributions and the parameters of these distributions.

Forecasting interest yields and currency movements also plays a role in determining future costs, especially on the life side.

Actuaries do not always attempt to predict aggregate future events. Often, their work may relate to determining the cost of financial liabilities that have already occurred, called retrospective reinsurance, or the development or re-pricing of new products.

Actuaries also design and maintain products and systems. They are involved in financial reporting of companies' assets and liabilities. They must communicate complex concepts to clients who may not share their language or depth of knowledge. Actuaries work under a strict code of ethics that covers their communications and work products, but their clients may not adhere to those same standards when interpreting the data or using it within different kinds of businesses.

Non-traditional employment

Many actuaries are general business managers or financial officers. They analyze prospective business prospects with their financial skills in valuing or discounting risky future cash flows, and many apply their pricing expertise from insurance to other lines business. Some actuaries act as expert witnesses by applying their analysis in court trials to estimate the economic value of losses such lost profits or lost wages.

There has been a recent widening of the scope of the actuarial field to include investment advice and asset management. Further, there has been a convergence from the financial fields of risk management and quantitative analysis with [actuarial science](#). Now, actuaries also work as risk managers, quantitative analysts, or investment specialists. Even actuaries in traditional roles are now studying and using the tools and data previously the domain of finance ([Feldblum 2001 p. 8](#)).

Remuneration

The credentialing and examination procedure for becoming a fully qualified actuary can be discouraging, and thus the profession remains very small throughout the world. As a result, actuaries are in high demand, and they are highly paid for the services they render ([D.W. Simpson 2006](#)). In the UK, where there are fewer than 8,000 fully qualified actuaries, typical starting salaries range between GBP24,000 and GBP30,000 (approx. US\$44,000–US\$55,000 c.June 2006) and newly qualified actuaries in insurance companies earn somewhere between GBP44,000 and GBP64,000 (approx. US\$81,000–US\$118,000

c.June 2006) per year. Many successful actuaries earn over GBP100,000 a year (approx. US\$185,000 c.June 2006) ([Dixon 2004](#)).

In developing markets such as India, annual compensation for newly qualified actuaries starts at around 8 lakh (800,000 Indian rupees or approximately US\$17,500 c.June 2006) and can go as high as 20 lakh (approx. US\$43,600 c.June 2006) ([Bimaonline.com 2003](#)).

Credentialing and exams

Becoming a fully credentialed actuary requires passing a rigorous series of exams, usually taking several years. In some countries, such as France, most study takes place in a university setting. In others, such as the U.S. and the U.K., most study takes place during employment.

United States

In the U.S., for life and health actuaries, exams are given by the Society of Actuaries, while for property and casualty actuaries the exams are administered by the Casualty Actuarial Society. The Society of Actuaries' membership requirements include passing six examinations for Associateship, and an additional two exams, together with the completion of a professional paper, for Fellowship ([SOA 2006](#)). The Casualty Actuary Society requires the successful completion of seven examinations for Associateship and two additional exams for Fellowship. In addition to these requirements, casualty actuarial candidates must also complete professionalism education and be recommended for membership by existing members ([CAS 2006](#)). Continuing education is required after certification for all actuaries.

In order to sign statements of actuarial opinion, however, American actuaries must be members of the American Academy of Actuaries. Academy membership requirements include membership in one of the recognized actuarial societies, at least three years of full-time equivalent experience in responsible actuarial work, and either residency in the United States for at least three years or a non-resident or new resident who meets certain requirements ([AAA 2006](#)).

Canada

The Canadian Institute of Actuaries, or the CIA, recognizes fellows of both the Society of Actuaries and the Casualty Actuary Society, provided that they have specialized study in Canadian actuarial practice. For fellows of the SOA, this is fulfilled by taking the CIA's Practice Education Course (PEC). For fellows of the Casualty Actuarial Society, this is fulfilled by taking exam 7C (Canada) instead of exam 7US. Unlike their American counterparts, the CIA only has one class of actuary—Fellow. Further, the CIA requires three years of actuarial

practice within the previous decade, and 18 months of Canadian actuarial practice within the last three years, to become a fellow ([CIA 2004](#)).

UK and Republic of Ireland

Qualification in the United Kingdom and the Republic of Ireland consists of a combination of exams and courses provided by the professional bodies, the Institute of Actuaries based in London, England, and the Faculty of Actuaries based in Edinburgh, Scotland—separate but coinciding bodies. No geographic limitations exist for these bodies. Students and actuaries in any part of the UK or the Republic of Ireland may be a member of either or both bodies. The exams may only be taken upon having officially joined the body, unlike many other countries where exams may be taken earlier. However, a candidate may offer proof of having previously covered topics, usually while at university, in order to be exempt from taking certain subjects. The exams themselves are split into four sections: Core Technical (CT), Core Applications (CA), Specialist Technical (ST), and Specialist Applications (SA). In addition to exams and courses, it is required that the candidate have at least three years' experience of actuarial work under supervision of a recognized actuary for him or her to qualify as a “Fellow of the (Institute/Faculty) of Actuaries” (FIA/FFA) ([Faculty and Institute of Actuaries 2006](#)).

Other countries

Many other countries pattern their requirements after the larger societies of the US or UK. In general, the website of these organizations is often the easiest source for finding out about membership requirements.

Exam support

As these qualifying exams are rigorous, support is usually available to people progressing through the exams. Often, employers provide paid on-the-job study time and paid attendance at seminars designed for the exams. Also, many companies which employ actuaries have automatic pay raises or promotions when exams are passed. As a result, actuarial students have strong incentives for putting in adequate study time during off-work hours. A common rule of thumb for exam students is to put in roughly 400 hours of study time per full exam taken ([Sieger 1998](#)). Thus, several thousands of hours of study

time should be anticipated over several years, assuming no failures ([Feldblum 2001 p. 6](#)). In practice, as the historical passing percentages remain below 50% for these exams, the “travel time” to credentialing is extended and more study time is needed. This process resembles formal schooling, so that actuaries who are sitting for exams are still called “students” or “candidates” despite holding important positions with substantial responsibilities.

Notable actuaries

Edmond Halley

While Halley actually predated much of what is now considered the start of the actuarial profession, he was the first to mathematically and statistically rigorously calculate premiums for a life insurance policy ([Halley 1693](#)).

William Morgan

Morgan was the appointed Actuary of the Society for Equitable Assurances in 1775. He laid the foundations of the actuarial profession, and may be rightly considered the father of the actuarial profession ([Faculty and Institute of Actuaries 1973](#)).

Isaac M. Rubinow

Founder and first president of the Casualty Actuarial Society ([CAS 2006](#)).

Fictional actuaries

Due to the low public-profile of the job, two of the most recognisable actuaries to the general public happen to be characters in movies. However, many actuaries were unhappy with the stereotypical portrayals of these actuaries as unhappy, math-obsessed and socially inept people while others have claimed that the portrayals are close to home, if a bit exaggerated. ([Be An Actuary 2003](#)).

Reuben Feffer

Reuben is portrayed by Ben Stiller and is from the movie *Along Came Polly*. Reuben is portrayed as nervous and extremely risk-averse; he even uses actuarial models to calculate the probability of relationships with women going well.

Warren Schmidt

Warren is portrayed by Jack Nicholson and is from the movie *About Schmidt*. The movie mostly covers Schmidt's retirement from an insurance company. Schmidt is portrayed as antisocial and unfriendly. He does not want to retire and spends his free time still working on actuarial calculations.

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External links

- [Actuarial News Resource \(USA\) website](#)
- [Independent Actuarial News Resource \(USA\) website](#)
- [Worldwide Actuarial Discussion Forum & Community](#) (Actuarial Outpost)
- [The Magazine of the Actuarial Profession in the UK](#)
- [Actuarial Jokes](#)

Asset allocation

Asset allocation is a concept of determining and maintaining a plan of investment in terms of a chosen mix of investments in different assets.

A large part of financial planning is finding an asset allocation that is appropriate for a given person in terms of their appetite for and ability to shoulder risk. This can depend on various factors; see investor profile.

Asset allocation in a nutshell

Inherent in asset allocation is the idea that the best-performing asset varies from year to year and is not easily predictable. Therefore having a mixture of asset classes is more likely to meet your goals. A more fundamental justification for asset allocation is the notion that different asset classes offer non-correlated returns, hence diversification reduces the overall risk in terms of the variability of returns for a given level of expected return. In this respect diversification has been described as "the only free lunch you'll find in the investment game." Academic research has painstakingly explained the importance of asset allocation, and the problems of active management. (see academics) This explains the steadily rising popularity of passive investment styles using index funds.

Examples of asset classes

- cash (i.e., money market accounts)
- Bonds: investment grade or junk (high yield); government or corporate; short-term, intermediate, long-term; domestic, foreign, emerging markets
- stocks: value or growth; large-cap versus small-cap; domestic, foreign, emerging markets
- real estate
- foreign currency
- natural resources
- precious metals
- other

To further break down equity investments into additional asset classes consider the following:

- By size:

Large-Cap

Mid-Cap

Small-Cap

- By style:

Growth

Blend

Value

- REITs
- International Investments: foreign or emerging markets

Academic studies

Brinson, Hood, and Beebower published in 1986 a study about asset allocation of 91 large pension funds measured from 1973 to 1985. [1] They replaced the pension funds' stock, bond, and cash selections with corresponding market indexes. The indexed quarterly return were found to higher than pension plan's actual quarterly return. The two quarterly return series' linear correlation was measured at 96.7%, with shared variance of 93.6%. The lessons of the study was that replacing active picks with simple asset classes worked just as good, if not even better than professional pension managers. Also, a small number of asset classes were sufficient for financial planning. One problem with the Brinson study was that the cost factor in the two return series was not clearly discussed.

In year 2000, Ibbotson and Kaplan used 5 asset classes in their study *"Does Asset Allocation Policy Explain 40, 90, or 100 Percent of Performance?"* [2] The asset classes included were large-cap US stock, small-cap US stock, non-US stock, US bonds, and cash. Ibbotson and Kaplan examined the 10 year return of 94 US balanced mutual funds versus the corresponding indexed returns. This time, after properly adjusting for the cost of running index funds, the actual returns again failed to beat index returns. The linear correlation between monthly index return series and the actual monthly actual return series was measured at 90.2%, with shared variance of 81.4%.

In both studies, it is misleading to make statements such as "asset allocation explains 93.6% of investment return". [3] Even "asset allocation explains 93.6% of quarterly performance variance" leaves much to be desired, because the shared variance could be from pension funds' operating structure. [4] The statistics were most helpful when used to demonstrate the similarity of the index return series and the actual return series.

Performance indicators

McGuigan described an examination of funds that were in the top quartile of performance during 1983 to 1993. [5] During the second measurement period of 1993 to 2003, only 28.57% of the funds remained in the top quartile. 33.33% of the funds dropped to the second quartile. The rest of the funds dropped to the third or fourth quartile.

In fact, low cost was a more reliable indicator of performance. Bogle noted that an examination of 5 year performance data of large-

cap blend funds revealed that the lowest cost quartile funds had the best performance, and the highest cost quartile funds had the worst performance. [\[6\]](#)

Return versus risk trade-off

In asset allocation planning, the decision on the amount of stocks versus Bonds in one's portfolio is a very important decision. Simply buying stocks without regard of a possible bear market can result in panic selling later. One's true risk tolerance can be hard to gauge until having experienced a real bear market with money invested in the market. Finding the proper balance is key.

Cumulative return after inflation from 2000-to-2002 bear market [\[7\]](#)

80% stock / 20% bond	-31.35%
70% stock / 30% bond	-25.81%
60% stock / 40% bond	-19.99%
50% stock / 50% bond	-13.87%
40% stock / 60% bond	-7.46%
30% stock / 70% bond	-0.74%
20% stock / 80% bond	+6.29%

Projected 10 year Cumulative return after inflation (stock return 8% yearly, bond return 4.5% yearly, inflation 3% yearly [\[8\]](#))

80% stock / 20% bond	52%
70% stock / 30% bond	47%
60% stock / 40% bond	42%
50% stock / 50% bond	38%
40% stock / 60% bond	33%
30% stock / 70% bond	29%
20% stock / 80% bond	24%

The tables show why asset allocation is important. It determines an investor's future return, as well as the bear market burden that he or she will have to carry successfully if to realize the returns.

External links

- [Asset Allocation](#)
- [Efficient Frontier](#)
- [Efficient Asset Allocation: Stocks or Bonds?](#)
- [Basic Concepts of Asset Allocation and Wealth Management Software](#)

Footnotes

‘ Stock return from a Wilshire 5000 index fund; bond return from a Lehman Aggregate Bond Index fund; inflation data from US Treasury Department.

‘ Input parameters are for illustration purpose only; actual returns will vary.

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Catastrophe modeling

Catastrophe modeling (also known as **cat modeling**) is the process of using computer-assisted calculations to estimate the losses that could be sustained by a portfolio of properties due to a catastrophic event such as a hurricane or earthquake. Cat modeling is especially applicable to analyzing risks in the [insurance](#) industry and is at the confluence of [actuarial science](#), engineering, meteorology, and seismology.

Perils analyzed

Natural catastrophes (sometimes referred to as "nat cat") include:

- hurricane (main peril is wind damage; some models can also include storm surge)
- earthquake (main peril is ground shaking; some models can also include fire following earthquakes and sprinkler leakage damage)
- tornado/hail
- flood
- winter storm
- brush fire

Other catastrophes include:

- terrorism events

Lines of business modeled

- Personal property
- Commercial property
- Workers' compensation
- Automobile physical damage

Input

The input into a typical cat modeling software package is information on the properties being analyzed. This is referred to as the exposure data, since the properties are exposed to catastrophe risk. The exposure data can be categorized into three basic groups:

- information on the site locations, referred to as geocoding data (street address, postal code, county/CRESTA zone, et cetera)
- information on the physical characteristics of the structures (construction, occupancy, year built, number of stories, et cetera)
- information on the financial terms of the insurance coverage (coverage value, limit, deductible, et cetera)

Output

The output is estimates of the losses that the model predicts would be associated with a particular event or set of events. When running a *probabilistic* model, the output is either a probabilistic loss distribution or a set of events that could be used to create a loss distribution; probable maximum losses (PMLs) and average annual losses (AALs) are calculated from the loss distribution. When running a *deterministic* model, losses caused by a specific event are calculated; for example, Hurricane Katrina or "a magnitude 8.0 earthquake in downtown San Francisco" could be analyzed against the portfolio of exposures.

Uses

Insurers and risk managers use cat modeling to assess the risk in a portfolio of exposures. This might help guide an insurer's underwriting strategy or help them decide how much [reinsurance](#) to purchase. Some state departments of insurance allow insurers to use cat modeling in their rate filings to help determine how much premium their policyholders are charged in catastrophe prone areas. Insurance rating agencies such as A.M. Best and Standard & Poor's use cat modeling to assess the financial strength of insurers that take on catastrophe risk. Reinsurers and reinsurance brokers use cat modeling in the pricing and structuring of reinsurance treaties. Likewise, cat bond investors, investment banks, and bond rating agencies use cat modeling in the pricing and structuring of catastrophe bonds.

Demand surge

Some cat models allow the user the option of including demand surge in the loss estimates, which is post-event inflation. After a large disaster, construction material and labor can temporarily be in short supply, so construction costs are inflated. The larger the impact of the event on the local economy, the larger the effect of demand surge. For example, an event that causes a \$5 billion insurance industry loss might cause demand surge to increase construction costs by 5%, while an event that causes a \$40 billion insurance industry loss might cause demand surge to increase construction costs by 25%.

External links

Purveyors of cat modeling software and services include:

- [AIR Worldwide](#), headquartered in Boston, and a wholly-owned subsidiary of Insurance Services Office, Inc. ([ISO](#))
- [EQECAT](#), headquartered in Oakland, California, and a wholly-owned subsidiary of ABS Group
- Impact Forecasting, headquartered in Chicago, and a wholly-owned subsidiary of Aon Corporation
- [RMS](#) (Risk Management Solutions), headquartered in Newark, California, and majority-owned by DMG Information, a division of the UK-based Daily Mail and General Trust plc
- [Floodrisk](#) Decision tree to choose an uncertainty method for floodrisk modelling
- [Global Disaster Alert and Coordination System](#) A modelling tool developed by the United Nations and the European Commission.
- [Modelling Society's Capacity to Manage Extraordinary Events](#)
- [Modeling Multi-Hazard Disaster Reduction Strategies with Computer-Aided Morphological Analysis](#)

Discount

In finance, **discounting** is the process of finding the current value of an amount of cash at some future date, and along with compounding cash from the basis of time value of money calculations. The discounted value of a cash flow is determined by reducing its value by the appropriate *discount rate* for each unit of time between the time when the cashflow is to be valued to the time of the cash flow. Most often the discount rate is expressed as an annual rate.

To calculate the net present value of a single cash flow, it is divided by one plus the interest rate for each period of time that will pass. This is expressed mathematically as raising the divisor to the power of the number of units of time.

Example

As an example, suppose an individual wants to find the net present value of \$100 that will be received in five years time. There is a question of how much is it worth presently, and what amount of money, if one lets it grow at the discount rate, would equal \$100 in five years.

Let one assume a 12% per year discount rate.

NPV = 100 dollars divided by 1 plus 12% (0.12) divided by 1 plus 12% (0.12), etc.

$$NPV = \frac{100}{(1 + 0.12)^5}$$

Since 1.12^5 is about 1.762, the net present value is about \$56.74.

Discount rate

The discount rate which is used in financial calculations is usually chosen to be equal to the cost of capital. Some adjustment may be made to the discount rate to take account of risks associated with uncertain cashflows, with other developments.

When looking at discount rates typically applied to different types of companies it shows very large differences:

- Startups seeking money: 50 – 100 %
- Early Startups: 40 – 60 %
- Late Startups: 30 – 50%
- Mature Companies: 10 – 25%

Reason for high discount rates for startups:

- Reduced marketability of ownerships because stocks are not traded publicly
- Limited number of investors willing to invest
- Startups face high risks
- Over optimistic forecasts by enthusiastic founders.

One method that looks into a correct discount rate is the capital asset pricing model. This model takes in account three variables that make up the discount rate:

1. Risk Free Rate: The percentage of return generated by investing in risk free securities such as government bonds.

2. Beta: The measurement of how a company's stock price reacts to a change in the market. A beta higher than 1 means that a change in share price is more exaggerated than rest of shares in the same market. A beta less than 1 means that the share is stable and not very responsive to changes in the market. Less than 0 means that a share is moving in the opposite of the market change.

3. Equity Market Risk Premium: The return on investment that investors require above the risk free rate.

Discount rate = risk free rate + beta*(equity market risk premium)

Discount factor

The **discount factor**, $P(T)$, is the number by which a future cash flow to be received at time T must be multiplied in order to obtain the current present value. Thus for a fixed annually compounded discount rate r we have

$$P(T) = \frac{1}{(1 + r)^T}$$

For fixed continuously compounded discount rate r we have

$$P(T) = e^{-rT}$$

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